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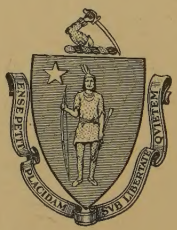

Boston, Massachusetts

BACKWARD AND FEEBLE-MINDED CHILDREN

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Educational Psychology Monographs

Backward and Feeble-Minded Children

Clinical Studies in the Psychology of Defectives, with a Syllabus for the Clinical Examination and Testing of Children

BY

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TO

HENRY HERBERT GODDARD

Trusted and generous friend, whose own devotion to research
with defectives led me to undertake
these studies

PREFACE.

The public schools receive and partially control, for a time, almost all of the individuals who will later trouble society as delinquents or dependents, or who will be troubled themselves by insanity or other forms of mental disturbance. Usually only the lowest grade of feeble-minded children fail to find their way to school.

Except in the case of infrequent offenders, and excepting also persons whose mental disturbance is due to specific kinds of poisoning, these individuals usually show exceptional conduct even in their school period, and they would be taken account of as children who need special attention, by anyone trained to and experienced in clinical observation. There is here the possibility of studying *in advance* the main sources of social danger and of individual misfit and shipwreck. There is equally the possibility of forestalling many of these ills and of taking away in advance the sting and smart from many an unhappy life. Aside from the service to be rendered to normal children *and teachers* by wise clinical oversight and counsel, the recording of exceptional functionings and facts in the case of these exceptional children, the canvassing of their potentialities, favorable and unfavorable, would be of inestimable service for the intelligent study of society's ills and for the solution of the problems that these individuals themselves present.

Of most immediate need is the provision of special classes for children who need a special pace or course or treatment to enable them to win success at something useful instead of failure at something useless. With this comes the planning

and installing of manual and occupational courses by which the most can be made of even slender resources. These classes and courses will at once relieve teachers from the worry of impossible discipline and from the dragging along of the retarded.

Let us not delude ourselves with the hope that the defectives are to be cared for in institutions. Existing institutions cannot house one-tenth of the number. More institutions should be built, but even then the most troublesome and dangerous *higher-grade children* will only exceptionally reach them. The cities must plan to manage these *in situ;* must plan to exercise, through the schools especially, a permanent directive and educative control that will make self-supporting and contented, if humble, citizens of thousands who, without such oversight, become the unproductive, unhappy dregs of perversion. A competent clinician-educator in the schools can render at least the service of an institution superintendent in organizing the activities of defectives; and far more, for he can really save the state the cost of maintaining an additional institution for such cases. Of course, the employment of one or another of the means proposed for preventing procreation by defectives is presupposed for such treatment *in situ.*

Of even greater importance, we may find, will be the early diagnosis of dangerous mental tendencies and habits, that occur even in the brightest and best of school children. The easing of adaptations in critical directions and periods, judicious counsel to parents and others who may direct the child toward such levels of occupation and environment as will be safest and most productive for him—these are services which the history of cases of insanity teach us may be rendered to thousands of threatened lives. The schools and institutions are already beginning to look for men competent to do this work, and psychology and medicine are just beginning to

realize that they must join hands with each other and with sociology and education in training clinicians capable of rendering this service.

This little volume suggests but a few of the possibilities of such clinical work. The studies are of school children or of persons who have been school children. With normal home conditions few, if any of them, would have reached an institution. They are just such exceptional children as one meets in the schools of a hundred cities, and they are of considerably higher grade than very many that one finds there. If they could have been studied in their home schools, I should know a good deal more about them. But the pictures of them here are as full and as true as circumstances permitted me to make them.

Years ago at Heidelberg, Professor Kraepelin told me, with enthusiasm which I well remember, how much he thought might come from an intensive clinical study of a group of some thirty school children. On my way to Lincoln Dr. Adolf Meyer encouraged me to undertake some such study in the Illinois institution. The results of a practice try-out of the plan are here before the reader. There are always limitations, methods were to be made, and of course the studies are imperfect enough. But whether for my development as a psychologist and educator or for the rendering of my most useful service, I could hardly ask a better opportunity than to repeat such a study in a public or private school, particularly if the study could be made under the auspices of a well-equipped university.

To Superintendent H. G. Hardt, who had the foresight to found and support the department, and to the Illinois State Board of Administration, whose attitude has been one of most cordial and intelligent co-operation, my best thanks are due. I wish to acknowledge, as well, the effective assistance

of physicians, teachers, and attendants, and especially the uniform courtesy and interest of the children themselves.

Dr. Goddard has been largely responsible for my undertaking and continuing the work, and has aided me at every point. Miss Julia A. Lathrop, of Hull House, and Dr. William Healy, of the Juvenile Psychopathic Institute, have given encouragement and assistance. Finally, the co-operation of my publisher has been most effective and cordial, and has permitted the book to develop well beyond the original plan. I regret only that other undertakings have prevented my attending to certain details of literary expression which may have needed modification in this change of plan.

E. B. H.

BALTIMORE,
Christmas, 1911.

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BACKWARD AND FEEBLE-MINDED CHILDREN

BACKWARD AND FEEBLE-MINDED CHILDREN.

CHAPTER I.

INTRODUCTION.

Of the population of England and Wales, it has been found that 1 in 248 are feeble-minded, and that almost as many, 1 in 273, are insane. It is probable that we have quite as many feeble-minded in America. For the most part they are living in the families to which they belong. Many of the states have not provided institutions for their care. In none is there provision for more than a minor percentage of the total number, even if the institutions both public and private were filled to their capacity, and they usually are so filled. Dr. Goddard quotes Dr. Fernald as saying that "There are at least 200,000 pronouncedly feeble-minded persons in the United States. Of these 16,000 are inmates of almshouses, while only 18,000 are cared for in special institutions."

The greater number of this vast army of defectives are for a part of their lives pupils in the public schools. Nearly 43 per cent. of a year's consecutive admissions to the Illinois state institution had spent at least a year in the public schools. But of the far larger numbers who did *not* come to the institution, it is certain that the great majority are higher-grade children who would be still more likely than the others to spend some years in school.

The problem of the feeble-minded is thus, at least at present, a problem of the homes and of the public schools rather than one of institutions. Indeed, it will long remain so. Not

only do parents love to cherish these maimed members of their flock, but the higher-grade children usually find means of avoiding detention in institutions, and spend their years in their home localities or in wandering at large. Even so, they are born to trouble and vexation of themselves and others. Their presence and conduct subject their families to humiliation; they are an intolerable burden to the teacher and to the schools; they recruit the ranks of criminals, prostitutes, vagrants, almstakers, and insane. Indeed, society is coming to realize that all these latter conditions for the most part proceed from the same source in weakened or tainted human stock; and that the elimination of these classes is a matter of the elimination of the causes operative in the degeneration and reproduction of weak and tainted human stock. This problem of prevention and elimination is the more fundamental one, and there are already known means to its partial solution which will become effective just as fast as society becomes better organized and more enlightened.

The presently pressing problem is one of the social adaptation, of this army of unfortunates, to an environment and to a level of mental functioning which will make the most of their scanty resources while assuring the protection of society itself. To help in solving both these problems the scientific study of the feeble-minded is recently being taken up with enthusiasm, both in Europe and in America.

The case material for such study, while present in many homes of every neighborhood, is more accessible in the ungraded or special classes that are more and more being organized in the public schools of cities and towns. The Parental and Reform Schools have many such children, and the schools for wayward girls as well. The Juvenile Court has to do with many of them, and they are to be found in jails, penitentiaries, almshouses, and hospitals for the insane.

On the whole, the institutions specially provided for the

feeble-minded offer the greatest advantages for such study. From the courts and schools and almshouses and families the children of all types are sent on to these institutions, which become veritable museums of defect of every type, to be studied here at the student's will. There is the single serious disadvantage that the child is here separated from his native habitat, and thus the family and personal history is often hard to obtain, and cannot be observed in its present effect upon the child. On the other hand, the child here lives in an environment which can be made and varied to order, and the effect of various environmental and social factors can be studied with almost laboratory precision. This latter is an opportunity for experimental pedagogy which will doubtless be taken advantage of by departments of education in state universities, which may affiliate with psychology departments in the institutions.

The establishment of Dr. Goddard's laboratory in the New Jersey Training School at Vineland marked the beginning of a new era in the American study of the feeble-minded. Following the lead of the New Jersey school, the Illinois state institution for the feeble-minded, entitled the Lincoln State School and Colony, was the first of the state institutions to establish a psychological department. The present volume presents some of the main results of the writer's work in charge of this department for a year and a half from its inception.

There were few traditions and no rules as to what such a department should do or what studies should be undertaken. As the work was actually done and as it is here reported it consisted, first, in a provisional classification and description of the membership of the institution as a whole beginning with the new admissions, involving the adoption of certain routine tests and of an official terminology in terms of which classification could be made: Second, the clinical

study of thirty-two border cases of backwardness and feeble-mindedness, made upon the highest-grade children of the institution: Third, a formulation of the methods of case study,

A CORNER OF THE LINCOLN LABORATORY.

and of suitable research tests for the mental functions involved in mental defect. Without further preliminaries, the work will be presented in this order.

CHAPTER II.

CLASSIFICATION AND TERMINOLOGY.

A preliminary problem had to be settled early, that of a classification system and a fixation of usage for the most common terms. The words *idiot, imbecile,* and *feeble-minded* have been used in the most varied and contradictory senses, even in the courts and in the institutions themselves, to say nothing of the confusion of laymen. It had become absolutely necessary to come to some agreement about them. Then there are many forms of each of these; many causes have operated and many types have been produced. And as to the intelligence, there are, of course, many degrees to be distinguished.

The possible groupings of the feeble-minded are thus most various, such as into Mongolian, cretin, epileptic, etc.; into excitable and apathetic, congenital and acquired, traumatic, tuberculous, *ad infinitum.* All these are legitimate groupings, and account should of course be taken of every child in terms of them, as far as they apply. But for actual handling of the cases, for fitting them to work in school and in occupations, a description and classification in terms of *mental* capacity and character seemed certainly to be what was needed.

To make a satisfactory mental description is one of the most difficult of tasks; and until very recently, if not even now, the psychologists have been less able here than the novelists and dramatists. To *measure* mental capacity, on

the other hand, has usually been thought to be altogether impossible. But a beginning had to be made. Happily, it was found that the English and French writers were tending to a more or less common practice in the main lines of classification and in the use of terms. In 1904 the English Royal Commission recommended that the term *feeble-minded* should include all mentally defective children who needed institution care, in three ascending grades of *idiot*, *imbecile*, and *feeble-minded* proper. For the French, Professor Binet, their most influential adviser in these matters, makes three grades similarly. He delimits them more definitely in terms of the amount of intellectual retardation as measured by a scale of tests of the intelligence.

At Vineland and at Lincoln the Binet classification and tests were found usable and useful. The children were before us; and as no other system offered half so practicable a means of bringing order into chaos, we proceeded to classify in these terms and to use these tests for routine examinations. In May, 1910, the American Association for the Study of the Feeble-Minded met at Lincoln. After examining the work of these two institutions, they took official action settling at least tentatively, for American practice, the following points, practically an endorsement of what they found in successful operation in these institutions: 1. The term "feeble-minded" is to be used generically to include all degrees of mental defect due to arrested or imperfect mental development, as result of which the person so affected is incapable of competing on equal terms with his normal fellows, or of managing himself or his affairs with ordinary prudence. 2. The feeble-minded are divided into three classes, viz.:

IDIOTS.—Those so defective that the mental development never exceeds that of a normal child of about two years.

IMBECILES.—Those whose development is higher than that

of an idiot, but whose intelligence does not exceed that of a normal child of about seven years.

Morons.—Those whose mental development is above that of an imbecile, but does not exceed that of a normal child of about twelve years.

They further approve of the use of the older pathological terms, such as hydrocephalic, microcephalic, paralytic, etc.

Each of the three grand divisions is subdivided into *low, middle,* and *high.* The use of the terms is illustrated in such combinations as "low Mongolian imbecile," "high epileptic moron." *Moron,* a new term, displaces the use of *feeble-minded* in the restricted sense, for the highest grade of the feeble-minded.

Binet uses the terms *idiot, imbecile,* and *debile* (nearly corresponding to moron), with no stigma, and not to name grades of defect so much as degrees of intelligence, which may change with age, an imbecile perhaps becoming a moron. He would not place children in the special school classes for defectives, on account of mental retardation alone, unless this retardation amounts to three years or more, or to at least *two* years if the child is under nine. Presumably he would not apply the terms idiot, imbecile, etc., *for retardation alone,* unless it amounts to as much as this, and not necessarily even then. For the still slighter degrees of retardation he would use the terms *Backward* for the merely retarded and *Unstable* for the equally large number whose instability is their most prominent characteristic. We may conveniently qualify these terms by any others that will further define the condition, in such combinations as "morally unstable," "neurasthenically unstable," etc.

In spite of Binet's suggestion and practice, the terms *idiot, imbecile, moron,* and *feeble-minded* will continue to be thought of as terms of final diagnosis, and it is probably best not to use them when the child gives promise of developing

much beyond the limits of mental age implied by the term in question. This practice is especially advisable if the child is quite young. In these latter cases he should simply be recorded as mentally "Retarded" in the degree found, with such other terms as best describe his actual condition.

It will be found that the term *feeble-minded* cannot always be applied to children, especially to children under fifteen, from the mere fact of their showing any given amount of intellectual retardation as measured by any scale of tests. Usually, it is true, when the child shows more than three years of retardation it is feeble-minded. But there are cases in which the intelligence is inhibited even to this extent, in functioning or in development, from causes whose removal permits the child to prove that he was never of the feeble-minded kind. On the other hand, I shall later present notes of many cases showing *less* than three years of retardation, but which are undoubtedly, and some of them very fundamentally, feeble-minded. As a matter of fact, all psychiatrists know that feeble-mindedness, like insanity, involves much more than the intelligence; and its correct diagnosis often involves the expert consideration of various clinical phases, and cannot be made by the automatic application of any schema or scale. It is evident, however, that diagnosis may be greatly facilitated and in the majority of cases may be practically accomplished by a careful measurement of the intelligence.

The upper limit of feeble-mindedness was placed at twelve years of mental age because observation and test, agreeing completely at Vineland and at Lincoln, showed that children of any higher intelligence are able to "float" in society, and insist on doing so. They manage to keep out of the institutions or to get out when placed in them. In France the defectives "float" at a still lower level; and indeed it will be

seen that the levels of eleven and twelve years of mental age have few representatives in the Illinois institution.

It must not be supposed that above the twelve-year level we shall at once find the levels of normality. We *begin* to find them here, if not even a little lower, in those small intelligences which quite suffice to happily fill some simple sphere in which they may have had their evolution. From this upward the successively higher levels of normality itself are as manifold as are the degrees of difficulty to be met by individuals in a complex civilization. Normality of intelligence is not a fixed strength of intellect to be required of an entire population. The various industrial and professional classes come to have intelligences that center about normals of different heights. The tests for twelve years of mental age pass the candidate to service in the least exacting strata of society.

But the transition from feeble-mindedness is not merely to the lower levels of normality. The cases to be presented will best illustrate how feeble-mindedness blends, along most of its upper margin, into the populous and turbulent zone of the psycho-neuroses.

To return now to our system of classification: The use of the Binet tests, while thought of in the adoption of the system, is by no means a necessity. The Binet scale gives the correct "idea" of a scale that *is* implied, viz., a systematically arranged table of norms for a variety of mental performances normal to each age of childhood. We shall extend, expand, or even displace the Binet scale just as fast as we determine more of these successively developing capacities. Binet has as least proved the possibility of measuring the advance in mental efficiency that normally comes with increasing age.

The Binet scale, a condensed and revised statement of which is given in a later chapter, is a series of some 64 tests graduated in order of increasing difficulty and grouped in

sets of five tests each, which can just be passed by the average normal child of the given age. The tests thus give a scale of norms for the ages one year to twelve years inclusive, originally one to thirteen inclusive. The revised scale provides further tests for fifteen years, and for the "adult" intelligence of "above fifteen years." In being tested, the child begins with tests that he can easily do, and tries progressively more difficult ones until he can do no more. His mental age is then computed from the height reached in the scale combined with the total number of tests passed.

There are three main results obtained by the use of the scale: 1. The child's intellectual level is measured. 2. Certain important practical data are obtained, concerning the child's ability to read, write, draw, use language, use numbers, use money, do errands, imitate, etc. The original scale as used in our Lincoln tests gave more of this information than does the revised scale, including, as it did, tests for reading, writing, the memory for what is read, etc. 3. The tests open up the case for varied observation, giving the examiner opportunity to make supplementary notes of the child's attitude, his emotional condition, his speech and movements, and various other characteristics of his responses and conduct. These notes all help, along with the count proper, to give a total picture and estimate of the child's mental character and capacity.

Applying these methods and means of classification for a year and a half in the Illinois institution, I have selected the consecutive admissions of one period of twelve months as being approximately representative of what the institution would show for its present more than 1300 inmates. Of course, the death rate and the frequency of discharge and parole are greater for some classes and degrees of defect than for others. As a consequence, the percentages found for new admissions differ somewhat from those of a census of

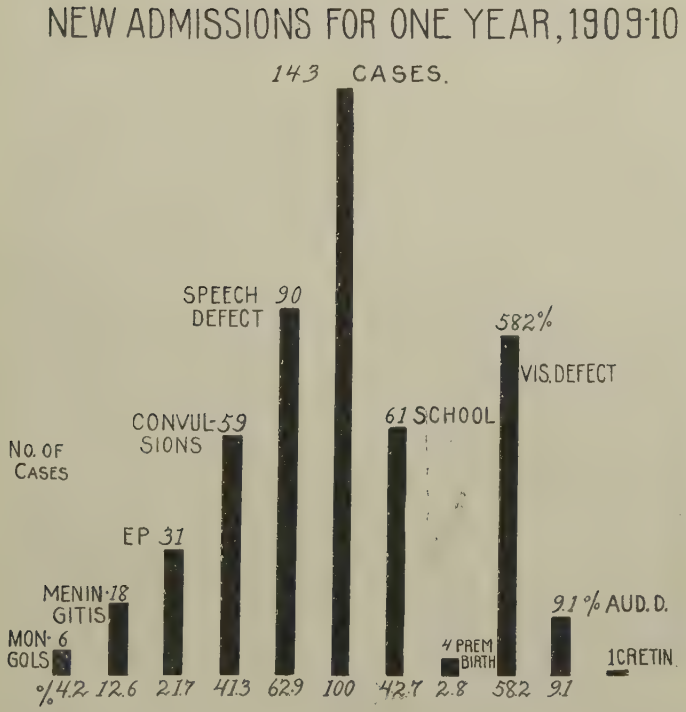
NEW ADMISSIONS FOR ONE YEAR, 1909-10
143 CASES.
No. OF CASES
MON- 6
GOLS
MENIN- 18
GITIS
EP 31
CONVUL- 59
SIONS
SPEECH 90
DEFECT
61 SCHOOL
4 PREM BIRTH
582% VIS. DEFECT
9.1% AUD. D.
1 CRETIN
% 4.2 12.6 21.7 41.3 62.9 100 42.7 2.8 58.2 9.1

Fig. 2.

population, but in certain respects are of even greater value than the latter.

The new admissions from November 17, 1909, to November 16, 1910, numbered 147. Fig. 2 presents some of the more important general data concerning the 143 cases for whom the data could be obtained. Fig. 5 tabulates the results of the mental examinations for 140 of these cases, seven having failed of examination by early discharge, parole, or death.

Reviewing the data presented in Fig. 2, it is noticeable that the Mongolians, 4.2 per cent., and the cretins, two-thirds of 1 per cent., though they are types which are much discussed and which are of much interest to science, are of comparatively rare occurrence. During the year the institution has reported but four cretins from the entire population, and one of these has recently died.

Fig. 3.—Typical cretin in infancy. Great progress since under treatment with thyroid extract.

Thus far the Mongolians have tested pretty uniformly to a mental age of four or five years, both at Lincoln and at Vineland. Of course, many exceptions to this will doubtless be found. The Mongolians are steady, docile, and tractable, and are probably more numerous than is indicated by institution records, since they can be easily managed at home. They have a pretty high mortality as well, due to the generally "unfinished" condition of their organs and tissues.

Twelve and a half per cent, or one-eighth of all new ad-

missions, were stated to have had meningitis or "brain fever." They form a group of cases which usually show symptoms peculiar to this causation, and they make little improvement. They merit a larger share of attention and study than they have usually received, as compared, for example, with the less numerous Mongolians and cretins.

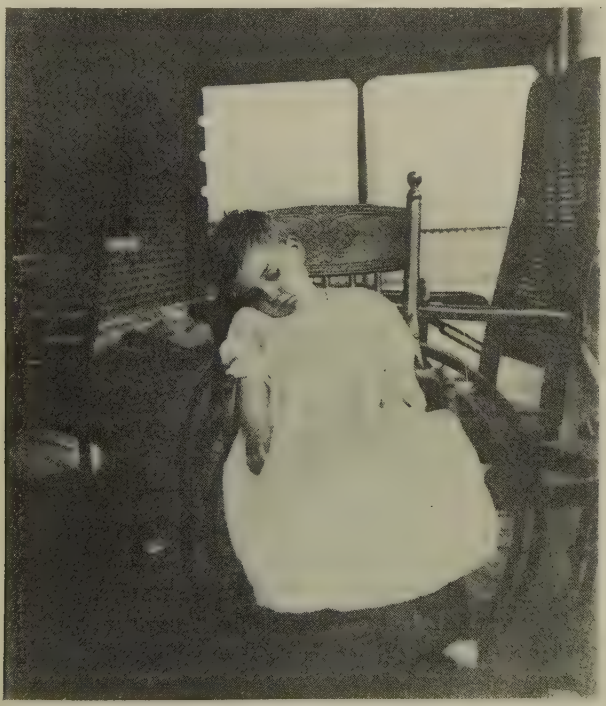

Fig. 4.—Exhausted by convulsions. Mental development arrested at 2½ years by meningitis.

Forty-one and three-tenths per cent are reported to have had convulsions at one time or another, though but 21.7 per cent certainly are or have been epileptic. It is to be noted, as well, that epileptics are not "supposed" to be admitted to

this institution. However, they are not provided for elsewhere in the state.

Of the children whose intelligence made it possible to measure the visual and auditory acuity, 58.2 per cent show not more than two-thirds vision in one or both eyes. Besides, there were many other cases of strabismus and of other visual defects. Nine and one-tenth per cent show auditory defect grave enough to be noticeable in the whispering and conversation tests for "practical" normality. A large percentage of the children tested have or have had disease of the ears.

The comparative constancy with which speech defect accompanies mental defect is shown by the fact that nearly 63 per cent of all new admissions have persisting defects of articulation, not counting those who have merely defective grammatical usages or tendencies to confusion in speech.

The fact that 42.7 per cent, indeed the majority of all but the lowest idiots, had spent at least one year in the schools, gives food for pedagogic reflection. Some of these children had spent from five to eight years in the first or first and second grades.

The mental examinations whose results are tabulated in Fig. 5 show that of the year's new admissions thirty-three were idiots, fifty-nine were imbeciles, and forty-eight were morons, using these terms in the Binet sense as indicating merely the intelligence level actually attained. The females numbered but sixty-one to the males seventy-nine, and were not more numerous than the males at any mental age. Mental defect is generally found to be more frequent among males. It will be noted that there are more cases at a mental age of two years than at any other. Probably this is because these are the most helpless of the children who tend to live for any considerable time.

MENTAL AGE OF NEW ADMISSIONS, YEAR '09-10.
59 IMBECILES
48 MORONS
33 IDIOTS
2
MENTAL AGE 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
NO. OF CASES 14 19 11 15 10 8 15 15 12 13 4 4 0 0 0
TOTAL 140
MALES 79
FEMALES 61

Fig. 5.

Note.—Of the numbers indicating mental age 1 means having a mentality of 1 year *or under*. 2 means above 1 year but not over 2 years, etc. Thus a child testing to 9½ years is included with the 10-year group.

Above the mental age of ten the number of admissions is seen to be almost negligible. Four of the eight who arrived left within the year. Two of these were insane, and one, an epileptic, was so complaining that his people soon removed him. The fourth was a third-grade schoolboy, the butt of

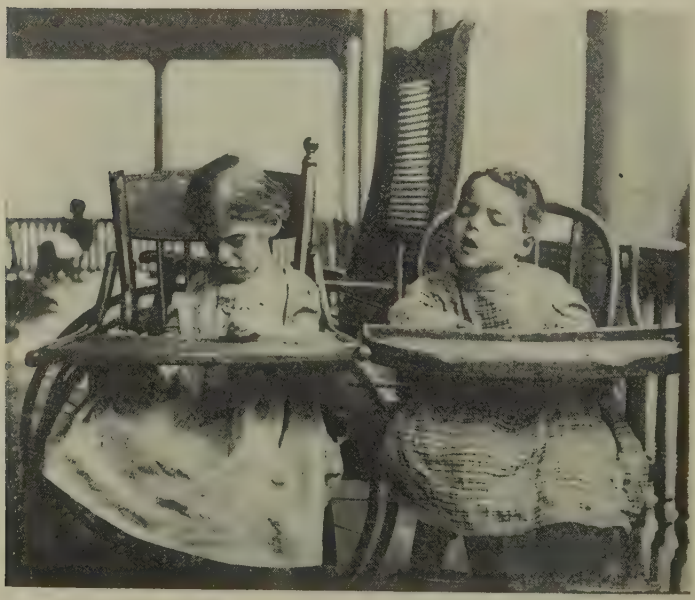

Fig. 6.—Under one year of mental age. The child looking up is one of three who showed the least mentality of all the children tested.

his town, who stayed but a few weeks. Four were female sex offenders.

The average age of the children classed here as idiots was 9.6 years; of the imbeciles it was 12 years, and of the morons 14.9 years. But one idiot was over sixteen years of age; but four imbeciles and four morons were over eighteen years. The oldest moron was thirty-six; the oldest imbecile was

forty-five, and the oldest idiot was twenty-seven. It is to be noted that the institution discourages applications for children that are over eighteen, interpreting its function to be that of a *school* for children in the formative period. However, the state has not provided elsewhere for the older defectives, who are very numerous and very dangerous to society.

Eleven of the new admissions classed above as morons and nine of those classed as imbeciles are of higher grade than those whom Binet would send to special classes on account of retardation. Two of these showed normal intelligence, but had serious speech defect in one case and weak attention in the other. These two children were soon discharged, and neither would have come at all but for disruptions in their families. Five of these cases are epileptic, and thus tend to further retardation. Two others are stated to have had convulsions. One child, with but a year of retardation, is given to thieving, and had remained four years in the first grade. Another, with but a year of retardation, has a severe nervous affection. Another, retarded but two and a half years and already mentioned as leaving early, was prematurely born at seven months, was morally delinquent and an "easy mark" for his fellows. Still another boy, with but one and a half years of retardation, was sent by a Juvenile Court as being violent to smaller children and destructive. He is incontinent, and has spent three or four years in the first grade. Another, a colored girl of illegitimate birth, defective in speech and vision, was retarded but one and a half years and was sent here for running away. These are all, or practically all, of moron grade.

Of these higher-grade admissions whose younger years causes them to be classed as imbeciles, one is a baby girl of three and a half years, retarded but a year and defective in speech. Another, an orphan boy of eight, has defective

vision and one and a half years of retardation. Another orphan, retarded two and a half years, is defective in speech and walk, is thieving and untruthful. The case of Harold R., an aphasic boy with sensory defects and enuresis, will be described later. Two twin girls with speech defect are retarded very similarly to each other, and to the amount of about one and a half years. A girl whose retardation amounts to two and a half years had remained in the first grade from her sixth to her ninth year, and had an immoral home with a mother who is feeble-minded. The last of these cases is a girl of seven years who shows but a half year of retardation in intelligence. She is an orphan who was expelled from school for self-abuse. She is defective in facial expression, is slovenly to an abnormal degree, has a chaotic mental span, and shows marked para-functionings in speech, writing, drawing, and general conduct.

In handling these cases I am impressed with the evident fact that the amount of intellectual retardation may sometimes be very slight and yet the mental defect may be grave, fundamental, and often incurable. Prognosis must sometimes be reserved, and a faithful description of the conditions found is, of course, a better record than the affixing of any formal labels. Some of these less-retarded cases are more distinctly of the feeble-minded kind than some who show three or more years of intellectual retardation. Of course, they usually show marked retardation in functions other than the intelligence. Probably, too, their intelligence itself will seldom develop past the twelve-year limit of feeble-mindedness.

While, therefore, it may usually be best to apply the terms *idiot, imbecile, moron,* and *feeble-minded* only to children who show retardation of the intelligence amounting to at least three years, or to at least two years if they are under nine, and while the safer rule for public school practice may

be to apply these terms only when there is *more than three years* (*more* than two when under nine), it should nevertheless be remembered that the use of the terms is in certain cases amply justified when the retardation is of less degree, and such children may, with perfect warrant, be sent to institutions and confined there as long as seems advisable. It should be remembered, too, that *unstable* children often can be best cared for in special classes, sometimes even in institutions, when the intellectual retardation may be very slight. Binet found that the *unstables* in the school classes were usually retarded but one or two years.

The chart in Fig. 5 shows a significant gap for the mental ages above ten years, and no admissions at all above a mental age of twelve. Such children would be freely admitted, but they did not present themselves. There is no doubt, however, that the higher-grade defectives are still more numerous than the lower. Arrest occurs at all stages of growth to maturity, and even beyond it, since there is a growth cycle for the whole life-period. The English tables show that the retarded become more numerous in proportion as the degree of retardation is slighter. Indeed, in England the generalization has been made that in any country there is a certain degree of mental strength which is of greatest frequency of occurrence, from which as a mean the curve representing the numbers who are better and worse endowed falls away regularly. At opposite extremes of this curve occur the idiots and the men of great talent, being fewest of all in numbers. The defectives, according to this formulation, are thus more numerous as in their mental capacity they approach this normal mean. Tredgold's tables of frequency for idiots, imbeciles, and morons bear this out in a general way.

Without insisting on this theoretical position—and it will evidently need revision—we know that the zone of border

defectives is a very populous one. Not only that, but it is pretty well agreed that here is our most *dangerous* class of defectives, presenting to society the problems that are hardest to solve of all the problems of defect. Dr. Fernald even identifies the whole class of instinctive criminals with the high-grade defectives, and considers all of the latter to be potential criminals. We know that prostitutes are recruited by thousands from such defectives, and that the recipients of public relief, as well as the petty trouble-makers that pester communities and courts, belong in large part to the same classes. Above all, it is the zone of marriageable defectives, often more fertile than normal persons, who are breeding tainted human stock, and who are helping largely in the spread of our most terrible diseases.

Evidently, then, it is of first importance that we should study the high-grade defective, and that we should obtain good clinical pictures of the various types of border cases. One may begin with the normal and work down, or with the feeble-minded and work up. In the Paris clinics I had been studying adults who showed various slighter degrees of retardation in the forms of neurasthenia, hysteria, epilepsy, and sometimes of dementia praecox. At Lincoln I at once selected thirty of the "brightest" children to be found in the institution, for clinical observation and test. The school principal and others who knew the children well co-operated in making this selection; and while the search was not exhaustive, there is reason to believe that these children were about as near to the normal as any group of approximately school age that could readily be gathered from the 1300 inmates. A few substitutions were made as acquaintance progressed, and the list was increased to thirty-two. Several have run away from the institution, or have been removed by friends. The majority have no homes or have abnormal home conditions, or they would not be here. However,

they are good representatives of just the types that are to be found in great numbers in the homes and schools and Juvenile Courts of the whole country. Two aphasic cases have been added from the new admissions, and there is one case from the Johns Hopkins Dispensary service. We shall first present these thirty-five cases in detail, and shall then tabulate some of the data obtained in the study of them. Reference to the latter tables may be made as the cases are studied; and the syllabus of examination which was used with these cases, with the description of the Binet tests, may well be looked over before the case studies are read. This syllabus is printed in a later chapter. In using these studies the data obtained by observations and tests made at the institution itself are naturally more to be relied upon, in most cases, than the home record furnished by parents, guardians, and others. However, the application blanks which give most of the home record are signed by physicians in more than 90 per cent. of the cases, and whenever possible the statements have been checked by information obtained from other sources. This part of the data must be taken for what it is considered to be worth.

CHAPTER III.

CLINICAL STUDIES OF BORDER CASES.

Fred J., Age Twelve and One-half Years.

Fred J., who came to the institution in March, 1905, at the age of seven, is a typical and lively representative of the *unstable* class. Of his people we only know that his father deserted the family, his mother died before Fred's admission here, and the boy was taken care of for two years by the Children's Aid Society. They found him quarrelsome and unreasonable, ill-tempered and destructive; and reporting that he could not be kept in the public schools turned him over to Lincoln.

CASE I.—Unstable and Quarrelsome. Energetic and Courageous. Flighty Attention except in Band Work. Defective Motor Control.

Physical examination shows Fred to be of about normal weight and nearly an inch below in height, with cranial measurements that are very little below normal. He has a normal strength of grip, but his lung capacity is 22 below the 110 cu. in. normal to his age. He has 20/30 vision in the right eye and 20/25 in the left, with normal hearing. His head and face are fairly well formed though with some irregularity and asymmetry. The head tends to be held to one side, the nervous control of the mouth is somewhat abnormal, and there is some shuffle in the walk. The medical

record contains nothing against Fred except frosted ears from playing out in all kinds of weather.

In school Fred reads only fairly in the second reader, does simple addition and subtraction and is learning the tables, writes in a scrawled fashion, spells and draws only fairly and does inferior work in manual training. He dances well and does fairly in calisthenics, but produces much disturbance. In general he does not care for "grade work," except that he loves drawing and attends well thru the half-hour of this exercise.

In spite of such a record, Fred is a magazine of energy for work and for mischief, for trouble and for service. Restless, active, warm-heartedly devoted to those who are kind to him and who interest him, he is indifferent to others and to all hum-drum tasks. His teachers says that he punches the other children and is even "brutal to them." He bosses, teases, and terrorizes. "All the boys knuckle to him." He can whip any boy who is not a great deal larger than himself and he promptly does so on occasion. He is explosive in all that he does, ordinarily, and his worst school fault, beside inattention, is said to be "smartness" and "feeling his own importance." His teachers agree that when any work is being given in class Fred is briefly but intensely interested and curious, then leaves it. He works, while inter-

FRED J.

ested, "twice as much as others." He is intent on the teacher until he gets what he thinks to be the main facts, then will not attend to details or remainders. Left with a task he works till he gets the first problem, then leaves the rest, and he has a "bad disposition about the thing turned down."

Music does some remarkable things to this explosive and inattentive boy. In a year he has learned to play first cornet regularly in the institution band, and is as steady and as sure as a clock in taking his parts at the right time and in the right manner. His inattention and explosiveness seem to mellow into thoughtful seriousness and controlled adaptation under the influence of harmony and melody. He is reliable and is continuously devoted to his music and to his musical instructor, and makes entirely normal progress in this direction. His instructor states that he "will learn a new selection as rapidly as a normal child of the same age"; and that Fred, with Felix N., George J., Vincent C., David F., and Casper H., "have learned to play such selections as *Martha, Wedding of the Winds, Chimes of Normandy,* and *United Nation,* with six rehearsals from Monday to Wednesday of the same week, half-hour rehearsals daily at 8.30 A. M. and hour rehearsals daily at 2 P. M."

In free play in the gymnasium Fred shows exceptional spontaneity and good intelligence in trying out and inventing "stunts," and he is perhaps abnormally courageous and daring in promptly taking any risk to carry out anything suggested, seeming to be without self-consciousness, as well, in the doing of it.

The Binet examination gave Fred a mental age of ten, with a retardation of one and a half years. He showed a weak attention span and was very distractible. He could not repeat five numerals, could not make change for four cents out of twenty-five, could only define by telling what

things are for, could not tell what one should do in any situations that were not very concrete, failed to construct a sentence that would use three given words, could not detect the nonsense in silly statements, and was unable to rearrange sentences of eight words when the words had been shuffled. His speech is quite defective: He pronounced "exstrisity," for "electricity," "twooly-woowal" for "truly rural," "rawel" for "royal," "awis" for "Irish," "bled" for "bread," etc. For "She couldn't do that herself, could she," Fred said "Couldn't do dat own-self, could 'em?" He picks up scissors and everything in reach, to the detriment of the task in hand.

The written tests (see the tables with description, following the clinical studies) show a handwriting that is irregular and infantile, but it can be read. The lines are not parallel, there are no capitals or punctuation marks, the page is extremely unpresentable and is apt to be scrawled with rude drawings and other markings. Told the story of "The Marble Statue," he showed interest and wrote

"One day a man side,
I wold give
antler thin
in the wold
If you was a live."

Told the story of "The Straw, Coal, and Bean," he reproduced some matter that had no connection with the story, and then added only "One day 3 of then run a way and the clod (coal) fall in the Whit (water?)." Asked to write of a trip in a flying machine, the sum total of the "story" was that they were "glad to get home." Asked to mark all the A's distributed at intervals in lists of printed capitals, he made a very large number of omissions, but showed good improvement with practice. Asked to write the opposite of each of twenty words, he succeeded with but four words

in each of two different lists. Asked to write words *similar,* in meaning, to twenty more, and given abundant illustrations, he succeeded with two in one trial and nine in another. He seemed unable to keep his mind on the conditions of these problems, though trying to give attention and understanding the directions. He would even himself suggest illustrative examples and then fail in the test that followed. As opposites he gave big—short, white—red, happy—mad, like—love, war—cold, many—much, above—love, bad—day.

Asked to indicate the points of the compass, Fred marked north correctly and then made inconsistent errors amounting to one hundred degrees for east, seventy-four degrees for south, and twenty-nine degrees for west. His errors for the directions of Chicago, Springfield, the institution farm, and the Lincoln Court House averaged twenty-four degrees and were more consistent. Given the photographs of nine of the best-known institution buildings and asked to place them in their proper relative positions on a rectangular table-top representing the institution grounds, he showed preliminary confusion, but finally placed seven correctly. Asked to immediately say the first word suggested by each of one hundred selected words pronounced to him singly, fifty at a sitting, Fred failed to react at all for thirty of the one hundred. This seemed to be mainly due to his inability to attend for the coming stimulus word. He would be full of something else at the moment when the word was given, would wake up and try his best to "think," then with a disappointed, child-like little smile would wriggle and give it up. He would grow progressively more restless, though trying his best, and I had to keep using devices to get his attention. When his attention was sharp he usually reacted and the time was then short, down to 1.2 second, while his median time was two seconds.

But even when seeming to attend, sometimes, no word

would come. Here, as often occurs with these children, the attention was probably to *me*, a personal attention, rather than the preperceptive warming up of associative material which would have been the essential of adequate attention to the *task*.

Fifty-seven of the seventy reactions made were single words naturally related to the stimulus word; seven showed the inferior relationship of mere *sound*, and six more showed at least alliteration or similarity of ending. Four were merely usual associates in spoken utterance. There was no perseveration or stereotypy, out of hearing being "out of mind" for Fred. Not even a reminiscent constellation was awakened, apparently.

Fred evidently fatigued quickly in these and in any experiments that involved attention to things at all abstract. His extreme restlessness as the written tests progressed amounted to contorsions and the most ludicrous devices to relieve himself, while still desiring to keep my good opinion. He sorted fifty cards into five groups, by colors, in eighty-two to ninety seconds, keeping within these limits for four successive trials. He made many minor errors from haste and bad control. His form board time was successively 25.3, 23.5, and 18.8 seconds.

On the ergograph he showed his tendency to early fatigue by making but two-thirds of the normal record for one and a half minutes. He did better with the dynamometer, and in the test for continuous grip thru sixty seconds he displayed heroic fortitude, grittily permitting only a step-wise, fairly regular descent from fifteen to nine kilograms with the right hand and a similar descent from fourteen to six kilograms with the left. In tapping as fast as possible for thirty seconds Fred fell eight short of normal with the right hand and nineteen short with the left. But he showed remarkable lack of control, drawing his face and body into all sorts of

shapes, changing his method frequently, tapping so heavily as to get the apparatus out of shape, and showing almost choreic movements during and after the tapping.

Fred waits on table and makes himself useful in a variety of ways. He has "run away" a time or two, but with no effective plan. The institution as it is at present can scarcely hold him many years. But he will always be defective and in imperative need of guidance in the use of his superabundant energy. With his contempt for working at things that do not strongly interest him, his tendencies to violence, his restlessness and his fearlessness, and on the other hand with his enthusiastic warm-hearted service when dominated by certain influences, he presents interesting possibilities if wise direction can be permanently given, and dangerous probabilities if it is not given.

The secret of his inattention, instability, and inability to submit to ordinary discipline lies with his defective neuromuscular control, so evident in the tapping experiments, in the asymmetrical mouth-tension of his recurring grin, in the unbalance of holding the head to one side and shuffling as he walks, in his ever-restless movements, and in the explosive character of his reactions generally. This tendency to explosive discharge masks the real *weakness* of his nerve centers, which are unable to inter-subordinate each other's activity, placing his organism wholly at the mercy of whatever functioning "gets the floor" for the time. The representations of past experience, of past injunctions and especially of more or less abstract principles and rules of conduct, scantily possible as these usually are in defectives, are powerless even when brought to mind in the face of these semi-convulsive reactions to *present* situations. The result is conduct that cannot long be subordinated to ends, his own or of others.

Such a life must have special conditions if its reactions

are ever to be linked up and co-ordinated into effective unities. For Fred, one of these conditions seems to be musical feeling, which seems able to hold its own in dominant control, working behind the scenes to mollify and modify all reactions. Felt harmony and melody are doubtless, on their motor side, of the essence of synthesis itself, the very means and act of inter-subordination and unitizing of otherwise disruptive functionings. We need not then be surprised at the wonders they sometimes work with the insane and with defectives generally.

Another of these "feeling-charms" is the spell of story-telling. More potent still because more lasting is the power of personal affection. The "Besoin de direction," which Janet finds to be so fundamental with the neurotic, responds gratefully to the finding of the first real friend, be he Freudian physician, hypnotic counselor, or sympathetic music-master.

Manual work, a music-roll or sled or pair of shoes to make, presents an outer, persisting center of control which along with the personality of an efficient instructor tends to gradually introduce more of unity and control into such lives. Group work in which the thought and work of twenty center in the same line of conduct, often drowns the foibles of individual flightiness in a *social* attention and conduct that has been the making of many a boy in army and navy, and that is effective in institution work. In sum, Fred has strong but ever-changing interests. To control them and him, he needs (1) the removal or prevention of the most serious distracting agencies, by provision of a selected environment; (2) domination by personal friendship and interest, by group projects and exercises, by feeling-work in music, story-telling, care of pets, etc.; (3) work that centers in continuing and interesting objects of construction; (4) the formation of inveterate *habits* of doing certain useful things in effi-

cient ways at proper times. Such habits, once formed, greatly lessen the need of attending, and help to *direct* the attention when it is needed. The regularity possible in institution life may do much to steady such flighty natures. Whether the nature itself can be permanently modified is a problem to be solved by such institution experiments.

Felix N., Age Fourteen Years.

Felix N., another representative of the unstable class, is a boy of whom most conflicting opinions have been formed; from his music instructor, who believed him capable of becoming an orchestra director, to his attendant, who found him inferior to boys who were evidently feeble-minded. We shall see.

CASE 2. — Unstable. Heredity of Alcoholism and Epilepsy. Convulsions in Childhood. Talented in Music, while Deteriorating in Intelligence.

Now fourteen years of age, Felix was admitted in July, 1907, from Chicago. His father is stated to have been quite intemperate formerly, and his mother is said to have been alcoholic, epileptic, and immoral, her parents dying of tuberculosis and heart disease. Five brothers and sisters died in infancy, at least three dying of convulsions. Felix was noticed to be peculiar at two years, and had frequent convulsions when small but fewer as he grew older, the last occurring nine months before admission. He also had "slight loss of consciousness" by times. He had an operation for abscess on the head and three for injury to the knee with blood-poisoning.

Felix would neither stay at home nor go to school. Starting to school at seven years, his school record was very unfavorable. Placed in an ungraded room, he made no progress, and his teachers considered that he could not be taught from books. He was very fond of animals and very susceptible to kindness. He was with some boys when they stole some beer; and as his home was unfit the Juvenile Court directed him toward Lincoln.

Physical examination finds the boy six pounds above normal in weight and a good inch above in height. His cranial

circumference is sixteen mms. above the normal average and he is well above in lung capacity and in grip of either hand. Vision and hearing are normal. The forehead is a little narrow and bulging, the face is not entirely symmetrical and its expression is asymmetrical, contracting unequally as he laughs. The palate is a little high, the ears are not symmetrical, the skin is pale. The medical examination records a little irregularity of the heart and of the right lung, with a slightly enlarged spleen.

FELIX N.

In school Felix reads with difficulty in the third reader, is called "very good" in spelling,* calisthenics and dancing, but has difficulty with the multiplication tables. He attends normally along the lines of his interests only. He uses profane and obscene language, and bullies and is sometimes cruel to other children.

It is in music that Felix wins distinction. To quote his instructor, he is "rather a genius as a performer on the cornet. In two years he has covered about five years' work usually allotted to a cornet student, has perfect control of embouchure, tones are *sure*, velocity very rapid. Plays cadenzas from *Bohemian Girl* with perfect ease and in an artistic manner. Plays a ballad

*This means that he can learn a "spelling lesson" well. But note the examples of his spelling in practice.

with feeling." He "will learn a new selection as rapidly as a normal child of the same age."

Mental examination with Binet tests in January, 1910, gave Felix a mental age of ten and a half years, a retardation thus of two and a half years. Re-examined in January, 1911, under very favorable conditions and with much care, he could only earn a mental age of nine and a half years, a retardation then of four and a half years. This agrees with the reports of both his attendant and his physician, who find that Felix has been "going back," becoming less intelligent as time goes on, in spite of his evident progress in band work.

In these tests Felix stated the month (January) to be November or October. He showed almost complete confusion in trying to reproduce the Binet memory passage, and at that he could not read the selection, which had to be read to him. He could not construct a sentence of three given words, could not detect the nonsense in silly statements, could not repeat seven numerals or sentences of twenty-six syllables. He could not define or distinguish abstract terms, nor define at all except in terms of use. The total later count shows that the number of tests passed was less by five than the number passed a year before.

In the written tests his handwriting is infantile, the lines are of all lengths and with no capitals or punctuation marks. His spelling is most fantastic, e. g.: Stachal (statue), sad (said), cood (could), wone (one), hat (hit), priving (present), shines (machine), arnalas (animals), derner (dinner), pice (piece), bengan (began), a (and), ought (out), they sawned (repeatedly for "they saw").

Interested in a story of two children who were allowed to make a two-day trip in a simple flying-machine given them for a Xmas. present, and asked to write of what these children would see and do, his story was as follows: "Sow

day starting of to see the world, so they was goging thay sond (saw!) a hols and dichis horsas and anialas (animals!) so thay start back so thay got back home." Asked about "sond" he repeated orally that "They sawnd a whole lot of dings," apparently considering both this spoken and written form to be correct. His opposite for "bad" was "rud" (rude), and when the test was further explained he could only give "dirty." His similar for "lightning" was "darking." His total performance was meager in all the written tests, except that he shows regular improvement with practice in marking A's.

Felix's control of his feelings and of their expression is distinctly abnormal. In school or band he cries on slight occasion. His manual training teacher reports that he has "the most peculiar disposition of any boy she knows," that he "gets mad" very easily and then wants to fight, threatens, "will kill after school," etc.; falls into a pout on slightest occasion, or cries; does many "little simple things," with "ways of a three-year-old child." In testing him I noticed his eyes fill with tears at an ill-success, but in a moment was surprised at his blurting out in laughter that was not entirely apropos. He looks up brightly at me, by times, as though he had an intelligent "idea," but his following sentence does not show it. His whole manner as well as his speech are most immature. He may, for instance, turn away with a childish grin when he should turn to you and speak.

We have here an inhibition of intellectual and social adaptations, with persistence of infantile characteristics, an emotional instability, and an almost or quite aphasic difficulty in self-expression, especially in writing and to some extent in mimic. But in music this boy seems to find himself. His brain, under the dominance of rhythm and of musical feeling, seems able to organize itself and to have

some development for this class of functionings, even while actually deteriorating in efficiency for the everyday work of mind. The further history of this case will be watched with interest. The latest word as I write is that his "teacher reports marked improvement both in work and disposition," while his physician says in effect that he is "not quite so reliable and cries at the least reproof." I incline to fear the persisting effects of his years of convulsions, or of the still operative tendency to deterioration which earlier expressed itself in convulsions.

Polly A., Age Thirteen Years.

We make take as a third representative of the unstable group Polly A., a rather dashing girl of thirteen, whose songs and other parts in entertainments have made her well known to all in the institution. She was admitted in 1905 and re-admitted in 1908 after a period of absence. Her parents are Hebrews, the father a Chicago teamster in good health, the mother insane and stated to have been a drunkard during the gestation period. Two children who died early are stated to have been neglected by the mother and one of them is stated to have been deficient mentally. The three who are living are in the institution at Lincoln.

CASE 3. — Unstable. Family History of Insanity, Alcoholism, and Feeble-Mindedness. Defective Control and Tendencies to Confusion.

The data about Polly's pre-institution life are conflicting and scanty, but she is stated to have had convulsions, the last in 1904. She was in school several years with "no result." She was irritable, did not obey, talked foolishly, wandered away, and played like a much younger child.

Physically, she is nearly fifteen pounds above the normal average in weight, is near the normal in height, and is well above it in lung capacity and in strength of grip with right and left hand. Her cranial girth is thirty-eight mms. above the normal average, the head being abnormally broad. Her hearing is normal, but her vision is quite defective, one-fifth in the right eye and four-sevenths in the left. Her head is fairly regular but is too broad in front of the ears, while the face is not of quite normal shape in its general effect. The ears are unlike, there is some incoordination of the eyes, and the outstretched hands show lack of nervous control.

The medical examination finds a small ventral hernia and a condition of the genitals suggestive of bad habits. Otherwise her physical condition is said to be good. Her home physician reported a "well compensated mitral lesion."

In school Polly gives little trouble on the side of discipline and gets on well with others, tho she is too fidgety to attend well, and a quick temper is stated to be her "worst fault." She reads rather well in the fourth reader, generally spells well, has much difficulty in doing long division, draws badly, but with a certain dash that interests sometimes. Her handwriting is fair but shows bad motor control, she is a good sewer, dances fairly, but is too restless to succeed in calisthenics. She is studying elementary history, geography, and physiology, with only very moderate appreciation and progress, and she is taking piano lessons. She was too nervous to continue the earlier piano lessons, using her limbs too much and being unable to concentrate even sufficiently for counting or the observance of rhythm. Later she has improved. She has a good voice for singing, though for talking it grows hoarse and weak, as with so many of the defectives. In cantatas and other entertainments she takes her parts with a charming abandon and self-forgetfulness. She has a wild way of unconsciously taking series of attitudes due to successive shiftings in her nervous balance, the effect being

POLLY A.

to add interest to her manner. These shiftings may be of a kind with a distinct *tic* of sighing which she shows from time to time.

The mental examination shows a mental age of ten years with a retardation of three years. The most significant characteristic revealed by the various tests is the distinct tendency to more or less irrational responses, to replies and acts that are only partially controlled by the demands of the situation or by the notion of what the result should be. Asked what "goodness" means she answers, "Fill this world today—with people and like that—it's all right ain't it?" She used the word "skeld" for "skeleton." Asked to distinguish wood from glass she said, "You can throw glass on the floor and the wood can't." She says, "The number of the death is 48," with satisfaction, meaning the "number of the dead." She is "flighty" in giving reproductions of stories, both in school and in the tests, weaving in masses of material that was not given. Occasionally she makes some statement that she cannot "explicate" even to herself, a result of temporary confusion of thought, as when she said "That might be high," when I proposed taking her upstairs to weigh her and measure her height. Told to subtract she may arrange the problem for division. The trouble is not merely one of language: On the spirometer she cannot blow slowly, she forgets and takes a second breath, blows before her lungs are nearly full, and her movements are reckless and badly controlled generally, though with best intentions. With distinctly more than normal strength her tapping rate falls well below normal with either hand. She picked up the instruments at reckless random, nosed into records, and generally did the wrong thing in irresponsible ways. In general, as I have suggested, a question asked or the terms of a situation to be met do not seem to remain innervated to check out incongruities in her resultant speech

or act, and these latter are not felt as matching or failing to match the ideas that prompt them. Unlike the neurasthenically unstable she is ordinarily not at all *troubled* by this incongruity, but minimimizes the importance of her mistakes. This has the effect of distracting attention from them, and Polly's personal charm and rather winning ways, with the devil-may-care dash of her very errors, gives, as is often the case, an impression of greater ability than she possesses. Besides, she does much better at some times than at others.

The written tests show a legible but irregular and somewhat primitive handwriting. Her mis-spellings are usually such as "to" for "too," "their" for "there," "women" for "woman," the omission of possessive marks, the use of the infinitive for past tenses, and other such childish errors. Except for her forgetting to write certain words, her paragraphs make an abridged sense, sketchily as a little child talks or draws, and she sees no more in the stories told her than a very little child would see. Her "flying machine story" is essentially: "I had fine time xx a good time xxx was happy xx gave little boy a ride xx he enjoyed it very well xx thanked me and I was nice about it so he went home I was happy all the time." It is totally colorless and "non-specific."

Of her 100 association reactions but 24 are found in the list of all the words given by 1000 normal persons. Sixty-eight are phrases or sentences, being her attempts to *define* the word given in spite of cautions to react with but a single word. Fifteen of these "definitions" are entirely tautological, many others are puerile, and there is little variety of response. Note the following given in succession:—

20. Chair—What you sit on.

21. Sweet—Nice.
22. Whistle—You blow.
23. Woman—A lady.
24. Cold—Freeze.
25. Slow—Real slow.
26. Wish—You wish somebody something.
27. River—Water.
28. White—Nice and white.
29. Beautiful—Purity.
30. Window—What you close.
31. Rough—Not nice.
32. Citizen—(No reaction. Word unknown).
33. Foot—You put a shoe on it.
34. Spider—What crawls.

Non-specific words and phrases, as "nice," "pretty," etc., are common and characteristic. The puerility and naivety of the reactions were entirely in keeping with Polly's facial expression as she looked at me in the experimenting. It was to be noted, however, that none of the reactions were entirely senseless or "bizarre." They were more or less apropos to the stimulus, and 93 *different* reactions were made in a total of 96.

Polly mis-placed seven of nine institution buildings when asked to arange their photographs, and she showed almost no knowledge of directions. North and south were almost interchanged, though she lives in "South Wing" as she well knows. Such tests as the form board, or the sorting of 50 cards with backs of 5 colors, were carried out promptly, the former in 21 to 27 seconds, the latter in 97 to 109 seconds. But wherever the problem involves the manipulation of ideas confusion is sure to appear.

More recently Polly would seem to be deteriorating somewhat; it is stated that she "forgets what she is to do" and

"sits rather stupidly." Unfortunately, too, mis-led by her very superficial "brightness," efforts are being made to remove her from the institution and to have her share the responsibilities of home-keeping. The result can hardly be other than disastrous; and yet when a parent insists the institution is powerless.

Winnie D., Age Twelve and One-half Years.

Winnie is not at all unstable, but she does not know very much. She is placed at the head of all the processions of institution children because she looks so charming. She is actually a very good representative of the *dull* group.

CASE 4.—Dull but Pretty. A Feeble-Minded Family. Colorless Reactions, Facile Type. Weak Lungs.

Now 12½ years of age, Winnie has been in the institution since she was 7½. Of her heredity it is stated that both her grandparents "drank some" and that her mother's mother was blind. Her own mother is blind in one eye, or nearly so, and is not of strong mind, tho fairly healthy and earning her living as a domestic, in separation from the father. Of the seven children three were stillborn and four are feeble-minded and are in the institution.

Winnie, the youngest, was late in learning to talk, showed no interest in music and no mechanical ability, was good-tempered and obeyed well but remembered poorly, and her teacher reported that the child could not learn anything.

Physical examination at the institution shows Winnie to be 11 pounds below in weight and nearly 5 inches below in height, with a head that is 24 mms. below the normal girth. She has a small lung capacity and her grip is somewhat below with the right hand, but is disproportionately strong with the left, as occurs with very many of these children. Her hearing is good, but her vision is sub-acute. While her head is fairly regular the face is not entirely symmetrical and shows an unpleasant irregularity of expression about the eyes, seen also in the mother. The base of the nose is low and broad, the palate is high and rather narrow, a lower molar is almost crowded out but otherwise the teeth are

good. The palpebral fissure is large, the little fingers show an abnormal curvature, the skin is pale. The child has had pneumonia and severe bronchitis bordering on pneumonia, several times. She shows a tendency to tuberculosis and it will probably be difficult to prevent some such early culmination of her respiratory trouble.

In school Winnie is still in kindergarten. She does well the simple child games and exercises, gets on very well with the other children and is a favorite with her teachers. She tells little untruths by times, in a young child's fashion and often to shield others rather than herself. She attends as well as young normal children, does not do or say silly or absurd things, excels in gymnasium work, in dancing, and in the simple manual work of the kindergarten. She has not been taught reading, writing, spelling, or numbers, is slow and inapt at drawing, and has had no other work except in singing. She knows all the kindergarten songs, but her voice is so weak and husky that not much can be done with it. She is without originality, takes everything placidly, and her teachers state that her worst fault is laziness.

WINNIE D.

The mental examination showed a mental age of 7 years

with a retardation at that time of 4½ years. Her speech is normal but for the weak and husky voice. She was unable to put together again the two pieces of a visiting card that had been cut in two diagonally. She did not know her age, could not copy writing so that it could be read, failed to describe pictures, could not name common pieces of money or make change of 4 cents from 25 cents. She is just mentally dull and sluggish and is not troubled about it either, smiling sweetly at me all the while. As she cannot write, the written tests were beyond her. In the tests for orientation she knew south and west, but made errors of nearly 90° for north and east, and was quite at sea when asked to point in the direction of well-known places. She mis-placed 6 of the 9 buildings. Her tapping rate was right 127, left 117, as compared with a normal 173 and 146. Her form board times in successive trials were 39, 33, 28, 27, 26, 20½, 22½ seconds. In both tapping and form board tests she was "as steady as a clock" with never a sign of confusion or hurry. She used continuously the same gentle method, followed directions well and made no breaks. Asking her to make quicker time did not confuse her in the least. The steady reduction in time in the form board tests indicates the readiness with which her mental and physical activities become *automatic* rather than showing ability to *learn*. The tendencies to automatism are perhaps the strongest that are to be found in the feeble-minded generally.

Asked to give words similar in meaning to 10 words pronounced to her, after the fullest explanation and with all the time she wished she succeeded with but 2 of the 10. Given 100 association words in two sittings, she could think of nothing at all for 40 of them, tho knowing all of the 40 words except one. Of the 60 reactions given, 42 were single words naturally related to the stimulus words. In 9 reactions she showed perseveration, i. e., the repetition of

earlier reactions. Such words as "black," white," would keep recurring, but not so often as to constitute the stereotypy so often found with these children. Her median reaction time was very slow, 4.1 seconds. She had too much mental inertia to get the words out even when they did occur to her, sometimes. At other times she would barely utter them, colorless associations at that. It all gave a vivid picture of a low-level, sluggishly working mind with great paucity of resources, and contentment withal.

It is the case of a child whose reactions are uniformly without color, the reactions of simple defect and passivity coupled with the charm of a doll-like beauty. Such a life passes simply and happily enough in an institution. But unfortunately she appears normal to the inobservant and to those who do not take account of her age. And she is almost certain to attract some would-be philanthropist who will take her out and eventually let her pass into the hands of the elements in society that are ever on the lookout for just such facile girls as this.

Jerry H., Age Fourteen and One-half Years.

CASE 5. — Dull, Sluggish, and Docile. Alcoholism in Family. Weak Memory, Thieving, but Generally Steady.

Jerry is a typically dull boy, usually but not invariably stable, who wins the affection of his teachers and is usually over-rated. Now 14½ years of age, he has been in the institution but a year. His father is stated to have been a periodical drinker and to have whipped the boy in times of temper. It is said that there is a brother who is "not bright." Jerry's mental peculiarities are said to have been noted first when he entered school, and the cause given was that he was "allowed to drink whisky until the age of 10 years." He was "subject to sore eyes," but with good health otherwise. His memory is stated to have been "very poor," but he was interested in music and in mechanical construction, tho he had a tendency to hide and destroy things and was not very good-tempered or obedient. The mother died and Jerry lived in an Orphans' Home, and makes vague statements about having had some schooling there.

Physically Jerry is 18 pounds below normal in weight and 3.3 inches below in height. His cranial girth is normal and his strength of grip is nearly so, tho his left hand has a disproportionate strength. In the spirometer test he falls 32 below. He has but two-thirds of the normal acuteness of either eye or either ear. The head is high behind and there is slight asymmetry and irregularity of head and face. The base and middle of the nose are low and broad, the front teeth below are impacted and abnormally long, but the teeth are otherwise quite good. The hard palate is narrow and perhaps a little high. The eyes are very prominent, the mouth is open much, there is a slight drooping of the left

shoulder, the walk is sluggish. The medical examination gave Jerry a clear bill of health, noting only some fine nervous tremors.

In school Jerry has a clean record on the side of morals and discipline, gets on very well with the other children, attends "normally," does not make silly or incoherent replies, is docile, amiable, the favorite boy in the room. Indeed he is a pet and trusted helper of his teacher, who when asked for Jerry's worst fault reports that he "has none."

JERRY H.

However, on the side of scholarship, this boy of 14½ is plodding with difficulty thru easy first reader lessons, is just beginning multiplication, and is doing work in drawing ordinarily given to very much younger pupils. He does best in industrial work, is learning to dance, and some simple story work and calisthenics complete his schedule.

The mental examination gives Jerry a mental age of 8½ years with a retardation of 5½ years. His speech shows primitive characteristics, such as the use of "dey" for "they," "mudder" for "mother," etc., tho he can articulate all the test-words given him. He could never repeat five numerals, could not count the value of six stamps, could not count from 20 to 0, could not copy a phrase dictated, did not know the day and date, could not make change, failed to name some of the ordinary pieces of

money, and could think of but 31 words in three minutes. When there was read to him a short news item giving about 19 "details" about a fire and he was immediately asked to tell of it, he could only recall that there was a "fire." Questioned then as to each detail he could recall a few, but with inaccuracies. He tries honestly, but says, "It leaves my mind." He tells me that he would go to the store for articles, but would forget what he started for and would have to return, tho he would keep repeating the name of the article to help remember it. If he stopped saying it over it "left his mind." He says that this often happened.

Jerry's responses show no absurdities, he gives good attention and shows a fine spirit, with politeness and consideration for the examiner. But he shows little energy, is *very* slow to respond or to think, his mind seeming sluggish, doing little and that little not too well. His eyes filled with tears when I showed dissatisfaction at his recalling so little in the memory test, but he did not become active even in his emotion and it quickly disappeared. He showed no signs of nervousness, no twitching or excitement. By times he would yawn or sit with mouth open, and no thoughts would come. On the play ground he *can* play well enough, but he hangs back and does not think of things to do. Left to his own resources, however, he sometimes shows spontaneity and even imagination, as when I surprised him playing "Office" with another boy and using bits of paper for "letters."

In the written tests he writes a fairly legible, child-like hand, using no capitals or marks. He wrote nothing for the first story or for the flying-machine test, sitting as if paralyzed. Trying to reproduce the "Straw, Bean, and Coal Story," he wrote: "Once these nos olse tvonen to get strow iill u i the fire cnel strow fell down and out and hean ju"

Tried with Burt's alphabet test, in which one complete

alphabet is picked in order from two shuffled alphabets, Jerry did not know all the letters. By showing him the form of the letter needed he was able to do this test in 5 minutes. He sorted 50 cards to 5 piles in times that were progressively lowered from 120 to 108 seconds in six trials. Similarly he made the quick form board times of 20.2, 16.4, 16.7, 16, 15.2 seconds in successive trials, almost equaling the performance of an alert physician. He tapped with equal steadiness, the count being 172, 167, 165 with the right hand and 149, 150, 150 with the left, the normal being R. 187 and L. 162. In these three latter tests he had the little intelligence necessary to grasp the method, and seemed to do them with the automatic regularity of a clock and with as little tendency to become ruffled or excited.

Jerry mis-placed 4 of the 9 buildings, and his errors for north, south, east, and west, respectively 50°, 124°, 28°, and 15°, showed not only ignorance of direction, but incongruity of thought. He had little notion of the direction of known points. The tests for similars and opposites seemed beyond his ken. Some "similars" written were love—pauta, tobacco —stank, tent—knite, big—like. He came to do fairly well in the A-test, as automatic work was again in play.

Given 100 association words he at first gave a number of *unrelated* words in times of 1 to 1½ seconds, apparently misunderstanding the test and instantly giving a word chosen in advance. Later he gave phrase or sentence definitions pretty uniformly in spite of repeated cautions to react with a single word. Thirteen of these were tautological and most of the rest were colorless and over-simple, showing his poverty of mental resources, but with good attention always. He showed some perseveration and some reactions that were governed by sound instead of meaning. Some consecutive reactions were as follows:

81. Ride—Ride a horse.

82. Thirst—When you're thirsty.
83. Thumb—Means your thumb.
84. Ill—Whenever you're cross.
85. Marriage—Whenever you get married.
86. Grandmother—Means whenever you got a grandmother.
87. Rich—Whenever you got lots of money.
88. Bad—Whenever you're bad in school.

Jerry's attendant reports him to be "the greatest thief on the ward," perhaps an exaggeration, and says that Jerry keeps a particular place to hide things taken. He adds that one cannot believe anything the boy says and that he semi-occasionally says foolish things, as when having a blood-shot eye, he told the doctor that he got shot in the eye. In spite of his general mildness he has occasional outbreaks of temper, and one cannot always count on the stability of even these most "stable" children. The type, however, appears in the data given.

Bertha A., Age Thirteen Years.

Bertha is another of the typically dull children with little that is positive mentally or morally, but with a fine sense of what is graceful in physical movement, and a readiness to learn in this direction only. Of Bertha's family nothing has been learned. She was for a time in an industrial school for girls, and has been at Lincoln since 1904.

CASE 6.—Dull and Docile. Mild Emotionalism, Paucity of Ideas. Most Graceful Dancer.

Physically she is of normal height and 6 pounds above in weight, with a head that is of nearly normal girth but that is abnormally narrow in proportion to its length. Her lung capacity is 13 above, her strength of grip is good but is greatest with the left hand. Her hearing is normal, visual acuity is one-half in the right eye and two-fifths in the left. The head and face are regularly formed, the lower jaw is rather undeveloped. The skin is much freckled and of a peculiar pallor. She was anaemic a couple of years ago, but has improved, and her health is considered good.

In school Bertha gives no trouble in morals or discipline, gets on well with others, attends well, does not do silly things or make absurd replies. She reads only fairly well in the third reader, spells satisfactorily, adds and subtracts two-place numbers with difficulty, and is learning the easier lines of multiplication. Besides she takes only music, physical exercises, and the simple manual work of the kindergarten. In the calisthenic and gymnasium work she is most graceful and is even a leader. She learns the exercises readily and remembers them well. She is perhaps the most graceful dancer in the institution and seems to have a real tho inarticulate sense of the "poetry of physical movement." An

earlier teacher of drawing found her "artistic" in her attempts at free hand drawing as well. Her piano teacher reports her to be a promising pupil in music.

Mentally she tests to a mental age of 9, with 3 or 4 years of retardation. She could not count from 20 to 0, could not tell the day and date, could not make change or name the commoner pieces of money, etc. In the written tests her handwriting is neat and legible, but like that of a little child. Asked to reproduce the story of "The Marble Statue," which she had just heard, she writes:—"A young man made a studeyu out of sund and it sude on grund and it was a perttry girl."

BERTHA A.

In the other tests she showed a similar paucity of resources and of expression. She could give scarcely any opposites or similars even when tested orally and alone. In the A-test she first failed entirely, then omitted 45 while crossing 38 in the two minutes. In the orientation tests she had little notion of the direction of known points, made a uniform displacement of 90 degrees for points of the compass and mis-placed 7 of the 9 buildings, 6 being placed at points distant from the correct locations.

In 100 association tests she remained meekly silent for 27, and did not know the meaning of *mutton*, *citizen*, and *justice*. Perseveration occurred four times and stereotypy was shown in six repetitions of the word *dress*. The tendency to drop into an automatic "tempo" of reaction was shown by giving 10 reactions at her median reaction time, 2.4 seconds. Her associations are

characterized by the now familiar lack of color and poverty of resource.

In school and elsewhere it is to be noted that Bertha does not volunteer replies. She is apt to sit stupidly with no thought but to do automatically the thing expected by her teacher. She seldom raises her eyes from her book or slate, confined in the very little world of the half-dozen things that she knows to do at her desk, and apparently never thinking beyond these. With all her apparent stability her teachers state that her worst fault is that she "cries too much," one teacher saying that she "can hardly speak to her without her crying." But the emotions are mild and fleeting, and the child is the same from day to day.

Robert P., Age Fifteen Years.

Any one who sees Robert managing a ball game, rushing hither and thither all in a perspiration and dazzling his oddly-assorted team with the lingo of an accomplished "fan," would be certain that the boy was unstable. We shall see that he is equally dull.

CASE 7. — Dull. Unstable. Family History of Alcoholism and Insanity. Premature Birth. Convulsions until Admission. Flighty Attention. Agraphic Mis-spellings.

Robert's father is stated to have been very intemperate, and a brother was insane. Robert was born prematurely at 7 months, was sickly then and "never had good health." He had convulsions three or four times a week, the last occurring in May, 1907, shortly before his admission to Lincoln. He was considered to be epileptic. He did not begin to talk until more than two and a half years of age, and had typhoid-pneumonia, measles, and scarlet fever. He went to school one year and was said to be a truant.

Physically the boy is of about normal height and weight, but with a cranial girth that is 25 mms. below normal, the head being 12 mms. too short, but normal in width. He is normal in lung capacity and in strength of grip, except that the left hand is disproportionately strong. He has two-thirds vision in either eye, with some strabismus, and his hearing is quite defective at the left. The forehead is receding, palate a little high, uvula small, ears very large, separate from the head and asymmetrically placed. His fingers are very unsteady when extended, he perspires with extreme readiness, etc.

Medical examination records that he has had chronic discharge from his ear, that his tonsils are enlarged and that

since entering the institution he has had broncho-pneumonia, measles, and otitis media. He has no record of convulsions since coming to Lincoln.

ROBERT P. AND DAVID F.

In school Robert reads fairly in the first reader only, does some addition and subtraction, but failed on 5×2 and 4×1. He does well in calisthenics and likes to "lead." He is also good at dancing and in basketry. In manual work he is generally quite unsatisfactory, only working by fits and starts, tho occasionally he turns in and works hard for a time. He does not work accurately and "complains of being tired all the time." In other school work he is said to be a "hard worker for a time," "when interested in something," like Fred J. He could learn band work, but after three

months' trial he had to be dropped for laziness and inattention. He would forget to come in at the right place with his part or at the right time for his lesson. In playing ball with him I note that while he can play well enough his energy and interest soon run down, he keeps throwing too low from sheer laziness, with no enthusiasm. He is generally found to be inattentive and liable to distraction.

Mentally Robert shows an intelligence of nine years with a retardation of 5½ years. His speech is nasal, but he can articulate normally. He could repeat 5 numerals but once in 7 trials, could not count from 20 to 0, nor make change of 4 cents from 25, name the months, detect nonsense in sentences, or give 6 of the 19 details about the "fire." He seemed to be bored with the trouble of thinking. He did not make absurd replies, but was merely weak in his adaptations and at the same time rather self-satisfied with them. "Not very hard" was his characteristic reply after *utterly* failing to rearrange the shuffled words of a sentence, upon my saying "That's pretty hard, isn't it?" Asked to try further he made the words up into some other jargon and was satisfied.

In the written tests the work is very weak both in quantity and quality. His handwriting is irregular almost to scribbling, tho large and therefore moderately legible. His misspellings, as in some of the other cases, suggest a form of agraphia. Examples are: Waunts (once), feiyend monshewn (flying machine), worild (world), that (they), wenet (twenty or fifty), dooler (dollar), woomen (woman), hose (house), she shad (she had), bencis (beans), frie (fire), strae (straw), heir (her), cold (coal), sne (saw), sad (said), goe (go), a crose (across), stache (statue), uch (wish), aand (and), chiikes (cheeks), rud (red), treind (turned), buteuring (beautiful). There are many others.

Robert occasionally omits words needed to connect his thoughts, apparently from carelessness or forgetfulness as

his thought shows logical continuity thruout. But there is scantiness of memory and of general resources. He simplifies the stories to the merest sketches and often misses essentials, giving the impressions of a very young child. The poverty of his imagery is shown in his story of the flying-machine trip: "They had a pot with some coffee," went "out to see the world," and "had a fine time," covers it all.

Robert's child-like egotism is well seen in the ball games, where he makes himself the shining figure among his still less gifted mates, and plays with tremendous swagger and noise. Happily he has become enamored of shoemaking, and has been sticking pretty well to the learning of this trade. At such an occupation and under wise direction this boy may be habituated to a life of useful and more or less contented service. But he is tricky, and if left to shift for himself would attain to very different results.

Dora M., Age Twenty-two Years.

In her neat uniform Dora is often taken for a steady-going attendant. She is a good example of the way in which many of the more stable higher-grade children may grow into the service of the institution. Unfortunately her stability disappears in the presence of the opposite sex, and her dullness is evident whenever her routine of life is varied. Now 22 years of age, she was admitted 9 years ago. She had lived in Chicago, her parents were dead, she had been at school, was very nervous at times, forgot things readily, was untruthful and "careless of herself." No more is known.

CASE 8. — Dull, Unstable. Feeble Mental Span. Adapted to Institution Life.

Physically she is 24 pounds above in weight and an inch above in height. Her head is 12 mms. below the normal girth, being abnormally short for its width. Her lung capacity is 45 cu. in. above, and in vision, hearing, and strength of grip with either hand she is normal. The palate is rather high, but there is no other abnormality worthy of note unless it be a slight strabismus. She is subject to tonsilitis and at one time had some little trouble with the left lung. Usually she is in fair health and able for her work.

In school Dora now takes only calisthenics, manual work, and music; but she had had grade work, has read in the fourth reader, and can now read a newspaper with moderate fluency, tho her reading is nevertheless illiterate and abnormal in character. For instance, she was utterably unable to pronounce *experience, gaily, charitable, correctional, juvenile, purpose,* and was unable to read long numbers. She can multiply and divide only with the smaller digits, and fractions are quite beyond her. She could not tell the

cost of four apples at 1½ cents apiece. She gives her teachers no trouble on the side of morals or discipline, gets on well with others, and attends well to teachers and tasks. She sews well and rapidly, and makes many of her own clothes. She is a good dancer, and sometimes leads the calisthenics class thru their exercises. She is a satisfactory pupil on the piano, reads her music well, and plays easy selections as part of the program of entertainments.

The Binet tests give Dora a mental age of 10½ years, a retardation of 11½ years. She will probably never have an appreciably better mind. Her mental "span" is childishly weak, not sufficient for the repetition of 5 numerals, which is a task normal to a 7-year-old, nor for a 16-syllable sentence, normal to a 6-year-old. Asked to say all the words she could think of in 3 minutes, she "ran out" completely in 1½ minutes. Abstractions are quite beyond her. Asked what *charity* is she said, "Aren't they the people that come here to look after things?" "What is goodness?" "Someone is kind to you." She did not know the word *justice* at all. Asked about a picture of a man and boy pulling a cart, she said "The humans have to pull the wagon."

DORA M.

The written tests show a normal and very fair handwriting and spelling. She occasionally omits a word, causing her sentence to make ridiculous sense. Except for this her composition is very fair. A few phrases such as "on her returned," "became in love," surprise the reader. In

her story of the flying-machine trip all that is "new" is "and we indeed delighted and we seen some beautiful sights on are trip." Her total output is very meager indeed in all the tests, except that she progressively reduced the marking of A's to automatism, with good final output.

The tendency to automatic functioning was also shown in making 13 of 100 association reactions in 1.7 seconds each, this being her median time. Eighty-three of the one hundred reactions were single words normally related to the stimulus word, 75 of these being found in Kent and Rosanoff's table of words given by normal persons. She shows some tendency to give words suggested by *sound* rather than by meaning, and this appears also in giving opposites and similars. Note tall—tell, thin—then, war—warm, many—any, for opposites, and tent—ten, feel—fell, winter—win, big—pig, snow—now, run—ran, for similars.

She made no error in indicating the points of the compass or in representing the location of nine buildings, and had a fair general notion of the direction of known points.

On the ward Dora is a trusted and useful helper in the storeroom, caring for the children's clothing, helping to wash and iron the finer things, waiting on table and having the privilege, for the latter service, of wearing a special uniform. She is talkative and lively, but gets disgusted and angry by times and then pouts and says she "has the blues." Her sewing teacher reports that Dora does not always act normally in the expression of her feelings, and that occasionally she breaks out laughing without apparent cause.

Generally she is satisfied and contented, and in the very simple conditions of her work and life she conducts herself normally and correctly. But the tests show a fatal weakness of mental control, tendencies to confusion, to "losing her head" whenever circumstances are a little complex, or under strain and stress. With her instincts well developed

we should expect to find just what general observation shows, a girl who is emotionally unstable, at the mercy of her sexual instinct, absurdly over-conscious of herself in the presence of men and having to be watched carefully when the latter are about. She was taken out of the institution and cared for in a family for a while. But this instability made it necessary to return her to to the institution for safety. Even here she gets into "disgrace as the result of flirting."

Here is a striking instance of a useful and comparatively happy life being realized in an institution, by suiting the conditions of environment, work, and stress to the girl's mental level, in the case of a girl who if she lived at large would certainly be a menace to society and to herself.

George J., Age Sixteen and One-half Years.

George is about the brightest boy that I have tested in the institution, and he is almost as unstable as any. But his instability shows some special characteristics which perhaps warrant us in classing him as *neurasthenically unstable.*

CASE 9.—Neurasthenically Unstable. Epilepsy and Cancer in the Family. Quarrelsome, Complaining, Thieving. Reads Much, and Intelligence Fair.

Admitted three years ago, he comes of Polish parents who lived in Chicago. His father was an epileptic who died of cancer. His mother died of pneumonia, and he has a brother with defective hearing. George had slight losses of consciousness or "fainting spells," but was not thought to be an epileptic. He was "extremely nervous," did not sleep very well, smoked cigarettes and chewed tobacco, was addicted to running away, was very ill-tempered and disobedient, continually quarreled with the other children and at times threatened them with a knife. He was at school seven years from the age of six. Later he was a short time in an orphan asylum where he could not be retained on account of vicious habits, and so was brought to Lincoln.

Physically he is about 15 pounds below in weight and two inches below in height, with a head that is 14 mms. below in circumference, being too short for its width. He is somewhat below in lung capacity and is distinctly inferior in strength of either hand. He has not more than one-half vision in either eye, but his hearing is normal. The upper incisors are separate, but the teeth are good. His skin is palish and the nutrition is not very good. The neck shows some goitre, the tonsils are somewhat enlarged and the cervical glands as well, and he is recorded as having a chronic

adenitis. In meeting one's gaze the facial expression is not normal.

In school George reads readily, tho with many errors, and he takes many books from the library, reading sometimes even when marching in the line-up for meals. He made glaring mis-pronunciations of *existence, occasions, ancestor, contracts,* etc., but read on untroubled. He does simple division, not long division, and he can work the very simplest problems in fractions, but all with a strong tendency to confusion and inaccuracy. He does not *care* about being accurate, and gets bored with tests that call for accuracy. In general he attends badly and tends to leave or slight his work. Manual work is well executed while the teacher is "right there," but is deserted when the teacher leaves. He sometimes uses good intelligence in inventing puzzles and games not connected with his work. The boys in the manual room seem to cater to him, recognizing, as they often do, an intelligence superior to their own. His manual teacher says that George "talks more intelligently than any boy in the room, about history and stories and own experiences," tho telling a good many things that are not true, but owning up when caught. He excels in drawing, but finds this easy and has little incentive to try hard.

George's bandmaster finds that this boy learns music just about as a normal child. In a year he has learned to play the cornet in treble clef and the baritone in bass clef, and in one month after starting with the clarionet he could play several easy beginner's pieces and had learned the chromatic fingering of the clarionet. All this was within the year of band work.

The Binet examination shows a mental age of 11½ years, a retardation of 4½ years at the time the tests were made. His speech is slightly defective, pronouncing "d" for "th," etc., tho the trouble would seem to be largely func-

tional. He finds an abnormal amount of difficulty in using language to express his thoughts, illustrated, for instance, when he said "in a several weeks," and again "I didn't interfere much with—I didn't monkey around much with medicine and things like that," his reply when asked to name certain smell substances. He followed this by saying, "You know half the time I didn't try things like that." For "His neighbor died" he said, "The death reached his neighbor." Asked how he felt he said, "For last two years I've been feelin' as good as a fish." In the manual room when he was asked why he made certain silly movements and clappings, he said he was "happy because the world is going around." Of course these errors show a troubled thought that is perhaps one with the troubled language.

The written tests show a fairly legible handwriting, tho the letters and syllables are often widely separated. Capitals and punctuation marks are often omitted or incorrect, and words and letters are omitted by times. He spells dindt (didn't), rite (right), jest, (just), slipt (slipped), siad (always for said), through, thrue and true (threw), tialler (tailor), enouhg (enough), mountians. Separations such as *the n, g reen, p ast, pas s ing*, occur frequently. Except for his forgetting to write an occasional word his composition shows logical normal sequences thruout. His invented story of a trip in a flying-machine dramatizes the initial situation, quoting the speakers: They went past fields like a bird, saw cows in pasture, farmers in the fields, all so small. A forest looked lovely, like green carpet. Then the mountains, where great birds followed them. Then a camp for the night, a good time next forenoon, and home again by evening.

In 100 association tests he gave 89 normally related single

words, 94 *different* reactions, and 4 failures to react, with but one sentence or phrase. His median time was 1.7 seconds and his maximum time was 3.3 seconds.

In the orientation tests but one building was mis-placed, and his errors as to directions were not far from normal. He gave similars correctly for each of 20 words in two trials, and 11 and 10 opposites in two trials of one minute each. In three trials he progressed to an output of 95 A's crossed with no omissions. To 10 words given orally he responded with correct similars in reactions of 1.9 to 3 seconds. In three repetitions of the same "similar" list, on different days, he made a number of variations, but no errors. His form board times were successively 21.3, 24.5, 19 seconds, after two practice trials.

George shows "nerve" and grit when buoyed up by social approval, as in the gymnasium where he grittily carried thru "stunts" that were almost beyond him, because he thought that I expected them of him. He speaks to me with a self-conscious and somewhat ceremonious air, looks to see if people watch him as he plays in the band, and is at all times abnormally self-conscious. He usually wears a dejected, wronged expression, complains a great deal and is always dissatisfied. His self-consciousness and his fundamental aboulia aggravate his troubles with language, which really rest on a difficulty of synthesis. The social adaptation involved in talking with me, the simultaneous synthesis of various factors social and linguistic, are too much for his weakly-constituted brain-mechanism. The finer adjustments clog, and using the coarser ones he blurts out what comes, feeling that he has done badly and yet not doing the utterly irrational things; for he is checked and controlled, *in the large,* by the representations of the results of his ac-

tions. He is therefore by no means irresponsible; but feeling his unceasingly bad outcomes he is perforce one of the unsatisfied, as neurasthenics constitutionally are.

He complicates the situation by lying and especially by thieving. One of his teachers says that George steals from people that he "has it in for," and not from certain others. He is easily "smitten," and is said to have stolen perfume and "everything he could gets his hands on" to lavish on one of the institution girls. Last year he ran away, but after enduring severe hardships was returned by the police. He is still determined to get away, tho a teacher recently reports a "wonderful improvement in both work and disposition," and that he is now "always smiling and pleasant."

Here we have one of those difficult natures more often classed as neurotic than defective, but who are much of both. Gifted with all the mental functions necessary for life in society, these functions work so frailly and incompletely that these individuals are always in trouble and are always making trouble. George's brains will doubtless float him out into society sooner or later, and we await with interest the additions to his record.

Hester A., Age Eighteen and One-half Years.

Hester's attractive voice, her prominence in school entertainments, and the problematical character of her "convulsions" make her the center of much attention. She has been in the institution since 1905.

CASE 10.—Hysterically Unstable. Pseudo-Epileptic Convulsions. Associations by Sound.

Her mother cooked on a dredge-boat and is stated to have been intemperate. The father died of pneumonia, and the child had measles, scarlet fever, mumps, pneumonia, and malaria. She had a bad temper, destroyed clothing, was "slyly disobedient," had bad sex habits, and was a great talker. She was in an Orphans' Home for a short time, and was in the State Industrial School for Girls for some years before being sent to Lincoln. While in the Industrial School she attended school for three years, but reached only the 2d grade. She says that she had some sort of "spells" when still with her mother.

Physically Hester is 3 pounds above in weight and 1.2 inches below in height, with a cranial girth that is 34 mms. below normal. She is 49 cu. in. above in lung capacity, and of more than average strength in grip of either hand. Her hearing is normal, but her visual acuity is but one-half in each eye. Her uvula is diminutive, her hands and fingers take abnormal positions when extended, the thyroid shows an over-fullness and she states that she was formerly treated for goitre.

In school Hester takes work in the sewing-room only. She writes a good hand and reads ordinary matter with readiness, but with illiterate mis-pronunciations.

The mental examination gives her a mental age of 10½ years with a retardation of 8 years. She could not change

4 cents from 25, defined only in terms of use, could not recall 6 of the 19 details in the memory passage, could think of but 49 words in 3 minutes, giving 9 successive words which ended in *-ing*. She was never able to rearrange the shuffled words of sentences nor to repeat 7 numerals or sentences of 26 syllables.

In the written tests she is very weak in capitals and marks, and occasionally forgets to write a word intended. Once she writes "We got a fifty dollars." Usually her papers are neatly put up, with regular lines of even length. Her reproductions of stories are moderately full and correct, but her invention for the flying-machine trip gives only: "Where do you think it took us to—we saw a laut of pretty things on our way." A nuff (enough), laut (lot), whean (when), one (on), are practically all the mis-spellings to be found in her written work.

HESTER A.

In the orientation tests she mis-placed 4 of the 9 buildings, and her errors for the direction of compass points and known points averaged 68 and 54 degrees respectively. She could give but 6 of 20 opposites, but gave similars for 16 of 20 words.

The association tests at once revealed certain characteristic tendencies. In 24 instances she failed to react at all, partly due to the emotional or reminiscent appeal made by

the stimulus word or by some preceding word. From the same causes many of her reactions were much delayed in time.

Of 21 selected extra words interspersed in the Kent-Rosanoff list of 100, the word *convulsions* caused much confusion and a reaction time of 10 seconds, the reaction being "Can't explain any." The word *escape*, (she had tried to run away), gave no reaction. *Spasm* gave no reaction but a thoughtful look. "Make believe," succeeding this, was simply repeated with a laugh, time 5½ seconds. Other reactions showing similar characteristics had a sexual reference. While she showed herself able to react in 1½ seconds, her median time was 3 seconds, showing the frequent occurrence of the above or other disturbing influences. But 17 of the 100 Kent-Rosanoff words called forth words found in these authors' list of reactions given by 1000 normal persons. But 22 reactions in all showed a natural or usual relationship of *meaning*, to the given word. In 42 instances, on the other hand, the word given was obviously suggested by its similarity of *sound*. Examples are deep—steep, mountain—fountain, house—horse, mutton—button, hand—band, short—stork, butterfly—butter, sweet—beat, whistle—fistle. The last is one of the five neologisms, or coined words, found in her reactions. In three instances she merely repeated the stimulus word. These inferior types of reaction are supplemented by others such as dream—train, Girls' Cottage—Cot, with long reaction times and apparently connected with repressed constellations.

My attention was first called to Hester by finding that, tho not considered an epileptic, she had suddenly commenced having a series of frequent and severe convulsions regularly reported as epileptic in character. There was the bitten tongue and every appearance of the convulsions being genuine, and on one occasion she was reported to have been

unconscious for over two hours and to have had as many as 21 convulsions in one day. It was noticeable that she did not injure herself much in falling, that she showed areas of anesthesia, and that the attacks could be made to cease by threats, or by changing the girl to another building.

On investigation I found that some weeks previous to the beginning of all the attacks she had a fist-fight and hair-pulling with another girl, had quarreled and called names a good deal, and had struck an attendant. As a punishment she was kept from the institution picture-show and dance. She grew very angry, escaped to the distant "Girls' Cottage," and violently resisted return. Allowed to remain here in the epileptic ward, she commenced having the convulsions, which continued when she was transferred to the hospital, but which ceased when she was allowed to return to her original quarters and standing. There has been no recurrence after many months.

Beside local anesthesias noticeable at times, Hester shows a self-conscious and abstracted manner, with nervous twitchings under excitement, and a considerable narrowing of the field of vision. She showed susceptibility to at least light hypnosis, and the indications from the association tests, with the other symptoms, point to a condition of hysteria. She was finally induced to talk frankly about her "spells," and her statement was essentially "I put them on," "I did it to be mean." She claims that, sleeping and eating with the epileptics, she "caught" the convlusions as she feared she would; and that her first attack was when an epileptic in a convulsion jumped on Hester's bed and frightened her. She claims not to remember what she did in the attacks.

This case illustrates the possibility of even trained physicians, familiar with epilepsy, being deceived by the symptoms of an hysterical patient who is herself familiar with epileptic

manifestations. There is of course the remote possibility of genuine epileptic seizures being occasioned by such suggestion, but the condition of hysteria that is actually indicated seems sufficient to account for the phenomena reported. The latest reports are that the girl continues to do well, and that much of the trouble may have been due to her not having enough of mental occupation.

Minnie G., Age Seventeen Years.

Minnie is one of those neurasthenically constructed individuals who become hysterical on occasion, and whose defective growth has been at the bottom of her limitations of body and intelligence on the one hand and of her neurotic disposition on the other. She came to the institution in November, 1909, from Chicago, with little of family and personal record beyond the statement that her mother was dead, that Minnie had always been incontinent and was so still, that she had disease of the ears and some trouble with the skin since having diphtheria at the age of six, and that she had reached the fourth grade in school.

CASE 11.—Neurasthenically Unstable with Tendencies to Hysteria. Urticaria, Incontinence with Cystitis, Tuberculosis.

Physically Minnie is 4.4 pounds below in weight and 3.4 inches above in height, with a head that is nearly normal in girth, but that is abnormally short for its breadth. She is well above in the spirometer test but a little below in strength of grip, has but one-half visual acuity in the right eye and very defective hearing in the right ear. The face shows some irregularity, the uvula is diminutive, the nails are very short, the chest is sunken, the back is constantly bent, and there is a general unbalance of the body with the lungs cramped by her crouching positions. Her walk is stooped and defective. There is poor peripheral circulation and the nutrition is not good. The vaso-motor system is unstable, with marked local variations of heat and cold. There is irregular occurrence of the reflexes and there are areas of hypo- and hyper-esthesia. The medical examination shows a condition of pulmonary tuberculosis with chronic myo-carditis and an "exceedingly unstable nervous condition." There has been found, as

well, a cystitis which resists treatment and which doubtless aggravates the enuresis. She has also had a peculiar and variable skin affection diagnosed as factitious urticaria

Minnie's school work has been limited to the sewing-room, where she is becoming quite competent in sewing and embroidery. She attends normally, gets on well enough with others, but is abnormally sensitive to reproof. She reads with ease any ordinary printed matter, but has never learned to multiply and divide. She writes a very fair and normal hand.

MINNIE G.

The Binet tests give Minnie a mental age of 11½ years with a retardation of 4½ years. She thought of and named 111 words in three minutes, told the time which clock hands would indicate if interchanged at a given time, gave rhymes to given words and could usually tell what to do when asked about a variety of emergency situations. She said "Friendship is a person who is kind to one another." Apologizing for an incorrect drawing she said, "I'm not a very good straighter, of course." She showed abnormal fearfulness and "edginess" about any unusual occurrence, and extreme suggestibility. After some trouble with a test she broke out with "Sometimes I get so stupid I don't know what to do."

In the written tests she crossed 81 and 98 A's in two two-

minute trials, and succeeded with 17 of 20 "similars" in one trial but did badly in another and in the tests for opposites, and gave rather weak reproductions of the stories. Punctuation marks are absent and capitals are usually in the wrong place or omitted. She causes breaks in the composition by omitting words that were probably present to her thought and would be expressed if she were talking. She also writes the wrong word by times, apparently from distraction. When she has to write of happenings that are at all complex she breaks down and simplifies the matter in semi-incoherent statements. But her thought generally progresses thru the story in sequence as things occurred, and her frequent errors in expression seem to be phenomena of confusion and of frail power of synthesis. She seldom mis-spells, the only examples being fithy (fifty), on (one), and way (away).

Minnie's intelligence would suffice for better results than those tabulated if she were not so fearful of doing badly and so markedly introspective and easily confused. She grieves over the fear that she may be feeble-minded and that our tests may prove this. By times she breaks out with infantile expressions of affection for those about her. Unfortunately she has fallen into bad sex habits and does not have a good influence on the younger children with whom she preferably associates. She has a habit of complaining and tends to a condition of hypochondriacal neurasthenia with tendencies to hysterical dissociation, and without sufficient strength of intelligence to furnish the needed correctives. Her physical condition is most serious and demands permanent institutional care. If her body were strong, her intelligence, tho defective, would doubtless suffice to float her in society as well as does that of many another of the host of the neurotics.

Beulah N., Age Fifteen Years.

Beulah is a rather typical epileptic, but she shows some phenomena of hysteria as well, and withal has the distinction of being a story-writer. She came to the institution in February, 1909. The home record states that the father was intemperate and ran away when the child was a baby. The mother died of diphtheria and heart trouble. A brother who died at three years of age is said by Beulah to have had spasms. The latter was kept at an Orphan's Home until brought to Lincoln. She had measles and scarlet fever followed by mastoid trouble. She also had epileptic convulsions which are said to have increased in frequency since an operation for mastoiditis in August, 1907. She attended the regular sessions of school while at the Orphan's Home.

CASE 12.—Epileptic, Defective Emotional and Motor Control. Gossipy and Over-Religious. Writes Creditable Stories.

Physically Beulah is 6½ pounds above in weight and 2 inches above in height, with a head that is 10 mms. too small in girth. Her lung capacity is 38 cu. in. above, she is somewhat deficient in strength of either hand, has but two-fifths vision in either eye and has very defective hearing in the ear that was operated upon.

The face is rather infantile and shows some irregularity, probably a result of asymmetrical muscular contraction. The teeth show some irregularity of position and the lower teeth are much crowded. The jaw has an irregular shape and there is a diminutive uvula and a high palatal arch. The ears are defective, the fingers are abnormally tapered and the second fingers are turned strongly outward. The fingers show convulsive movements when extended and spread.

The medical record shows that Beulah is not considered strong, having tendencies to bronchitis and gastritis. She has right lumbar scoliosis and "slight lung and heart involvement." She continues to have severe convulsions, and there is at least a temporary partial paralysis of the right side of the face, the right eye being abnormally open while the mouth and lower chin are drawn to the left.

BEULAH N.

In school Beulah reads fairly in the fourth reader, works problems in division and simple fractions, does not spell well, is fairly original in drawing but does not finish her work well. She does poorly in basketry and irregularly in clay modeling, showing originality in the latter but lacking persistence in the face of difficulty. She does badly in calisthenics and dancing, is original in story-writing and tells stories well. She also studies history, physiology, and geography, but with less than normal progress. She is "very quick to see thru a problem," attends well to her teacher and to certain tasks, but often stops and "looks into space," perhaps "making up stories," her teacher suggests. On the whole her teacher thinks she attends fairly well "with allowance for dreams." She gets on well with other children, and gives much time and interest to the Bible. She is decidedly inclined to gossip, to over-confiding, and to mild complaining and criticism.

The mental examination gives Beulah an intelligence of at least 12 years, a retardation thus of not more than 2½ years. Asked what to do before undertakinig an important affair

she answers, "Pray and think." *Charity* is "humble and right like Christ." She gives 109 words in 3 minutes. Her mental span is too weak for 7 numerals or for sentences of 26 syllables, and she cannot distinguish between abstract terms. But her vivid imagination enables her to succeed in the first of the paper-cutting experiments and to make progress with the other one, and her interpretation of pictures was normal. During 2½ hours of Binet testing her conversation and actions were sensible and natural thruout, excepting for three or four incorrect or peculiar uses of words and excepting that she showed a marked tendency to gossip, to over-confide, and to *talk religion*. There was also some abnormal confusion of memories. "Revolution is when the man rang the Liberty Bell." It is "where they make a big racket, but I don't guess they do either." "It's where the soldiers meet together to tell over their old times and talk about the revolution." "What I thought was when that little boy called 'Ring, father, ring,' or was it Paul Revere's ride?" She once asked her teacher what the capital of Chicago was.

On another occasion she tells me that she wants "to be some place where I can mind the Bible," and grows quite intense as she complains that now she cannot "say my prayers with all my heart," as formerly. She says, "I think its awful that they ever crucified Christ that way, don't you?" She wants to be a "Catholic Sister," tho not a Catholic now. After rambling on in gossip about the institution, she wants to talk of sex matters, and says she would tell of the dirty things the girls say, "if you were not a man." She claims that she will not listen to these things herself. She showed distinct sexual excitement at various times and in the presence of other men. She is easily influenced even to mean conduct, by certain girls, and her disposition and mentality are quite different on different days.

Another of Beulah's characteristics which she shares with

other epileptics is her inclination to talk about her "spasms" and other ailments. Incidentally her talks with me about her convulsions throw more or less real light on their character. Some of her convulsions have been recorded as epileptic and others as hysterical. As a matter of fact some of them evidently have both characters. Sometimes she has been "talked out" of "having an attack" by the assurance that she would not have it. Sometimes she can avoid them by telling the girls to "come and play with me." Sometimes she does not lose consciousness in the attack and then she feels so dreadfully that she tries to reach the unconscious condition to escape the torment, and thus may sometimes seem to "put it on." She would always rather "lose conscience" than to know what is going on in the attack. Ordinarily, in a convulsion, she is only aware of her head's initial turning to one side. She has been a sleep-walker, and tells of recent instances in which her sleep-walking was the expression of a dream. She is reported by her teacher and others to have had attacks in which she would become "nervous" and "faint" without losing consciousness or falling, and to have had other attacks that were "markedly hysterical."

In tapping as fast as possible, in the first 30-second test Beulah pounded the key somewhat and was quite irregular in rate. In the second trial she hammered as if she would pound the instrument to pieces, even pounding with her elbow, clawing with painful tenseness, and growing red in the face. In the third test it was painful to watch her, the movement was so beyond her control that her fingers could scarcely hit the key. In the fourth test her movements were "wild," and fearing a general convulsion the testing was not carried further.

In the written tests Beulah shows many errors and a rather variable performance, apparently doing well but for distraction. Her story of the trip in a flying-machine, while show-

ing imaginative ability, is spoiled by "grown up" moralizing. Her handwriting is that of a much younger child and she omits most of the punctuation marks. She occasionally misspells, examples being staches (statue), roesy (rosy), hear (hair), been (bean), the (they), to (two and too).

Beulah writes very smooth English and shows a pretty originality of thought and sprightliness of imagination in making up little stories, one at least of which has been printed in a newspaper. I quote the first part of another, of the many that she has written for me:

THE LIBERTY BELL.

"I was dug out of the ground all rust and dirty, and in little tiny pieces. I was sent to a big manufacture and put into a very hot oven. I stayed there so long that I went to something runny like water. And then I was pouned till I thought there was going to be nothing left of me at all. But when they stopped, what do you think I was? Why, I was a big bell.

And I was so heavy that it took a good many men to lift me. They put me in a very dark car and I had a long ride. The car stoped many times. But no one came to take me out. But at last four men took me out and put me in a big tower and rang me many times.

One day a very old man came and stood by me a long time. Pretty soon I heard a boy cry, ring grandpa, ring and it is said he rang me so hard that I cracked."

Her "Story of a Penny," "Story of a Needle," and most of her other stories are built on much the same simple model suggested by her school lessons; and I fear that there may be even here the tendency to automatic woodenness of imitation so common in the deteriorations of epilepsy. But she has had little instruction or sympathetic encouragement in

this story-writing, a gift which might well be utilized to the advantage of the girl and of the school.

The case is one of those sad ones in which along with a streak of genuine ability there is mild but unmistakable defect of both intelligence and emotions, with incipient psychoses characteristic of epileptic deterioration. It would be a fatal mistake for Beulah to attempt living at her own direction outside of the institution. As I write, the latest report comes that she "continues bright and original, but makes no more progress in school work."

Marshall E., Age Thirty-six Years.

Marshall is one of the older "children," but all of the feeble-minded remain boys and girls for life. He is a good example of an intermediate condition between feeble-mindedness and insanity, and is often thought to be too wise for either. We shall see.

CASE 13. — Mildly Insane, while Feeble-Minded. Semi-Delusions, Automatisms, Grandiloquence. Religious Mania and Moralizing.

Of his family it is stated that the mother died insane and the father of alcoholism. Previously to 1891 the boy was for some time in a Catholic school and it is commonly said that he was "studying to be a priest." In 1891 he was adjudged insane in Cook Co., Illinois, and was sent to a hospital for the insane. Two months later he was sent to Lincoln where he has since remained.

At present he is a man of average weight and 2.4 inches below the average height. His head is 22 mms. below the normal in circumference and is shorter than the average by 10 mms. The forehead has depressions above the orbits, the jaws are well forward, the wings of the nose are wide, the lips thick, the tongue over-large, the teeth and jaw irregular and the palate a little high.

There occurs a very frequent and marked contraction of the muscles surrounding and closing the eyes, with winking and drawing down of the eyebrows. The eyeballs themselves are rolled by times and show marked incoordination, especially when excited as when playing the horn in the band. The eyes will not steadily follow a moving object.

The fingers and hands are large and chubby, the shoulders are held unequally, and the bodily carriage and walk are untoned and stooping. The lung capacity is considerably above

the normal average, while his strength of grip is somewhat below. The right eye has but two-thirds of normal vision. Hearing is normal. The physicians do not report any serious physical disturbances beyond some troubles with digestion.

MARSHALL E.

At a little distance Marshall's stooped and peculiar walk and his decrepit and unkempt appearance suggest a rapidly aging little old man instead of a "youth" of 36. Seen more nearly he will be found to be talking to himself or others. He will probably have a policeman's club or some substitute for it; and from one to three policeman's stars, actual or imitated, will be pinned on his chest tho perhaps partially concealed from sight. At intervals, and frequently when absorbed in conversation, he makes a stereotyped movement with one hand, striking it against his lower chest. The movement is so habitual as to wear his shirt away. Questioned about it he says it is a "little way of mine." His garrulity is remarkable, and is marked by a ceremonious use of gestures and pet phrases. Scholastically, Marshall is reported to know three or four languages and to give other bookish evidence of deserving a place outside. As

a matter of fact he can say the Pater Noster and some other church pieces in Latin, is really able to converse somewhat in German, and has somewhere acquired a very superficial acquaintance with a little French. He exploits these furbelows to the dismay of the uninitiated, and quotes dates with an air of exactness that tends to conceal their frequent inaccuracy. He rehashes stock moralizings in grandiloquent language and style, and with much punning and joking.

Brought to task with numbers, however, he is utterly unable to multiply or divide by two digits, and shows general confusion in handling numbers; when asked to divide he did the sum by adding, and incorrectly at that. Asked how many apples at 3c each he could buy with 45c, he fumbles, counts on his fingers, and says: "I'd get 45 apples at 3c a piece and I'd be left 89c total." His handwriting is very scrawled, irregular, and angular, but is more legible than it appears. He is punctilious with his spelling, the 590 words written in three tests showing no real mis-spellings except that of *pedestal,* tho he occasionally neglects to write some letter. He can read the local paper with ease but does not do very much reading. His articulation shows a recurring difficulty in sounding "th", and there is a thickness of speech as of a person semi-intoxicated.

In the band Marshall plays the B Bb bass horn. He is a poor reader but very musical. He will learn to play operatic selections in a few rehearsals, but reads and plays very automatically. For instance, he cannot start to play anywhere except at the beginning of a strain.

The mental examination finds Marshall to have but 11 years of mental age. He showed a frail memory span for numerals and sentences, and embellished his account of the memory passage with masses of incorrect data stated in "pretty big words but then there's a meaning," as he observed.

In the written tests he reproduced stories quite well, but no test shows any productive imagination. He crossed A's rapidly but with irregular accuracy, and was able to write similars and opposites for most of the test words given. One hundred association tests gave but 12 normal single word reactions, 86 being sentences or phrases used to define. The stimulus word was repeated 13 times. In twelve reactions he made a gesture as his first or a prominent part of his first response to the stimulus. His definitions are often excellent but for their wordy and ceremonious form. His tendency to automatism appears in his adherence to a fixed tempo adopted for these reactions, 37 of the 100 reactions being within one-fifth second of his quick median time of 1.7 seconds. He used this same tempo on another occasion when reacting with the similars of given words.

Marshall is reputed to be honest and generally trustworthy. He gets on well with the boys, helps with odd jobs, and spends much time with his music. He delights in having children about him and they are fond of him. He is a devoted Catholic, talking much of religion and attending as many church services and funerals as possible. He has occasionally shown mild delusions of persecution, these even becoming "pronounced" at one time. He only half believes that he is a policeman, but he persists in acting the part. When excited in reading or talking he "lays it off" in gestures, rolling his eyes and contracting his facial muscles.

Marshall's speech and writing abound in high-sounding but hollow strings of words, ceremonious statements, stock expressions, and examples of mental automatism and stereotypy that are of a kind with his formal and incessant gesturing and his automatic movements. Some of this is illustrated in the following extracts from one of his letters. "I've got

no show push pull backing nor standing * * I'm a poor homeless relationless, destitute lad * * I'm for all and I'm not Pretentious Pernicious Superstitious Deceptive nor of the disliking kind of People. I'm not built that way I'm like the Hon Henry George and his great 5 ct cigar. he says he and his cigars are both for man but the chief one is Jesus Christ mine and your Savor so there you are although I'm a sinner I declare to goodness I look things square right Justly and Honestly in the face as so should be may be and must be the case."

He is another classic example of flighty attention. Too many things occur to be said, directive control is lacking, and the normal sequences are broken. In writing he constantly slips from his point and starts with some unrelated topic that has caught his attention. His frail mental span fails to hold what is just past until it may exercise its blending control upon what is coming. If some one brings him back to the circumstances his intelligence usually suffices to meet the situation. Asked to compare two given words he finds it impossible to hold them apart and examine each singly. As he writes, some of the letters and words intended drop out of the functioning mental span before they can be written, and thoughts as quickly leave his mind as he talks, so that some of his sequences are as bizarre as those of certain dementia præcox cases. But except for this weakness of mental span his thought seems to go forward with a fair sort of logical sequence. He falls back on a domination by sound-sequences and symbolism, rounding out and expanding his adjectives and phrases in tiresome prolixity and tautology.

All this is of course more symptomatic of insanity than of feeble-mindedness. But there are as well the evident stig-

mata of defective growth in body and in mind. A nature badly formed would seem to have nevertheless pushed on to a further stage of intelligence than is commonly reached even by the high-grade feeble-minded, but only to be thrown back in some of the deteriorations that so often mark dementia præcox. It is unfortunate that we do not yet have a history of Marshall's early adolescence.

Corbin C., Age Thirteen Years.

Corbin C. is a Baltimore boy whom I examined at the Johns Hopkins Hospital. He is typical of a class of cases, numbering one-eighth of a year's admissions at Lincoln, who are usually reported to have had meningitis or "brain fever," most often in infancy.

CASE 14.—Meningitic Feeble-Mindedness. Violence to Playmates, Confused Substitutions for Acts Intended. Excitable and Noisy.

Corbin's family seem normal, except that a younger brother is a deaf-mute, a condition said to be sequent to a severe burn of three years ago, but probably of more fundamental origin. Corbin's birth was normal, and up to the age of fifteen months he is reported to have developed normally, learning to walk and making progress with talking, etc. At that age he is said to have had a severe fall, striking upon his forehead. A few weeks later he suffered a severe attack of meningitis and is said to have had spasms. After this he never acted like other children, and did not re-learn talking or walking until three and a half years subsequently. He always acted "wild," would yell loudly as if "hysterical," indulged in all sorts of mischief and was extremely destructive, breaking dolls, tearing clothes, etc. He is said to be fond of playing "Indian." His mother claims that he is absolutely beyond correction.

Corbin attended school four years, beginning with his sixth year. He never advanced beyond the lowest grade, and for the past two years his mother has kept him away from school. He would not return from school until late in the evening, and would wander away from home. At night he sleeps but little and then has somnambulisms, wandering

about the house in apparent fright and talking constantly, sometimes jumping upon chairs.

He has fits of unprovoked anger, and if other children do not do as he wishes he threatens them with any available weapon. A week before examination he struck a playmate with a hammer, and he once stabbed his brother in the forehead with a bread-knife, tho sorrowful about it afterward. He is extremely nervous and is constantly at variance with other children. On visiting the family recently the mother told me she had to constantly "watch him if he had a knife." He is unable to dress himself or to tie a "bow-knot".

CORBIN C.

The physical examination records nothing especially abnormal except slight exophthalmos, some anæmia, and mouth-breathing. He is below the normal weight and height but data for a full physical description are not at hand. He is markedly defective in facial expression, with twitchings and asymmetrical contractions of the facial muscles.

The mental examination finds Corbin to have a mental age of 7½ years with 5½ years of retardation. He was unable to distinguish right and left or forenoon from afternoon. There were 4 fingers in each hand but only 5 in all. He

could not repeat five numerals, confused 5 and 10-cent pieces, could not "change" 4 cents from 25 cents, and was unable to count 9 cents' worth of stamps or backwards from 20 to 0. He could not name in order the days of the week or months of the year, nor give the date even approximately.

Corbin copied written matter, tho badly. But when asked to write "The pretty little girls" he wrote "sais," apparently supposing that this was correct. Asked to write various single letters and numerals he would write something entirely other than what was called for, tho seeming anxious to do as directed. He could not read a first reader selection continuously, but would make out some words and then jump at wrong conclusions about the others. He tended to become excited and would then say bizarre things. Confused in trying to name nickels and dimes, he commenced to say "five cents, ten cents, fifteen cents," becoming more excited and wanting to write these words at the blackboard. In trying to count the value of stamps he talked confusedly of getting "two for a cent, and red ones you get three for a cent." The days of the week were "Sunday, Monday, Palm Sunday, it's two Sundays before," etc. When he could be *kept calm* he talked readily, describing pictures promptly and with some fullness, carrying out commissions, etc.

We have here a child whose permanently injured brain makes him extremely liable to states of uncontrolled excitement, these states being attended by conditions of anger, fear, anxiety, with aphasia and apraxia, according to circumstances. The bizarre responses, the paraphasia and parakinesia that occur so frequently in the testing of these cases, are probably of a kind with the hammering and cutting of playmates; and this characteristic of their mental functionings causes some of them to be very dangerous members of society. Still others, while harmless, break out with ill-timed fits of laughter, with jumping, yelling, or what not, misunder-

stand directions, etc. One little girl persisted in trying to put the window *up*, in her earnest attempt to carry out my request and my obvious endeavor to put it *down*. Many of these children are deficient in facial expression or in its normal control, while many others look far more intelligent than they are, the features not having been marred by *primary* degenerative tendencies in growth. As a rule it is extremely difficult for these children to profit by the normal or usual methods of learning. In the case of Corbin the child will certainly escape much trouble by being placed in a good institution, and society will be the safer for it.

Harold R., Age Six Years.

The two following cases from the year's admissions at Lincoln are probably to be classed with the preceding case as illustrating the varied effects that brain lesions may have in children that are primarily well endowed.

CASE 15.—Aphasia with Defective Facial Expression. Enuresis. Good Intelligence shown in Normal Play.

Harold R., a sober-faced little boy estimated to be of the age of six, dropped in from nowhere one July day in 1910, and nothing has been learned of his family or personal history. The boy's weight was 32 pounds and his height was 37½ inches. His walk was normal but his speech was limited to a few words imperfectly uttered, and his hearing seemed to be quite defective on either side. His vision seemed to be of fair acuity in spite of severe strabismus. At least it enabled him to tie threads and to deal with small objects. He was found to be troubled with enuresis. The medical examination found no additional abnormalities but classed him as an "idiot," and to everyday observation he hardly gave promise of more than this.

Tried with the Binet tests the boy's inability to talk prevented his going much further than the tests for two years of mental age. As usual in such cases I improvised some tests with objects such as would tend to call forth the higher levels of reaction if there might be any. Here is what happened with this unpromising-looking "idiot": Given my bunch of keys he went to the laboratory door and tried in its lock only the key whose size seemed to *promise a fit*. He tried the latch too, tinkering with the more promising parts. Finally he turned the knob of the upper lock and *held it so* till he could simultaneously turn the lower knob,

and thus open the door. He very evidently foresaw the necessity of operating both locks simultaneously, as was proved by his repeating this combined procedure until he could get it to work. Having been told that he could get out he worked at this task for a long time, hesitating only with an occasional "tan't."

HAROLD R. AND MORTON W.

Given a box of blocks he sat motionless before them for ten minutes, probably thinking that I meant them to be let alone. Assured then that he might play with them, he immediately took them out one by one *in order of size* and arranged them in a long row from smallest to largest. He expressed his enjoyment of this, and called my attention to his "finds" of various kinds of blocks. He searched continuously till he found all the cones that would fit the holes in certain blocks. The T-square was next rested on three four-legged blocks to form a trestle, and he varied the distances between the trestle's supports, with much enjoyment.

In such ways he played on by the hour, unaided and without disturbing me, humming a sort of melody for awhile but usually quiet.

I showed him the form board and placed each block in its place. When they were removed he promptly accepted the problem and placed each block in some place, but at random. Then for four trials I called his mis-placements wrong and placed them right. In the fifth he succeeded in 221 seconds, helped by one hint. Next time his time was 130 seconds, unaided. The next was much quicker but for an accident. He did the next in 58 seconds, and crowed with delight. He would never allow that it was "done" till every piece was properly in place.

When shown the card-sorting tray with 50 square cards in its central compartment, he at once joined with me in turning over each to see its color before placing it in the proper compartment for this color. Next time he did it unaided, sorting all to the five trays without an error, in 6½ minutes. He enjoyed it thoroly.

These and other tests and further observation of his plays showed that he had normal spontaneity and the ability to learn progressively from his experiences. His power of will and attention, as shown in persistent tho not automatic application to the task in hand, are even above that usually found in a 6-year-old. His use of make-believe and his imitative acting out of past experiences, and the intelligence with which he chose his ends and means and adapted these to each other, would also be creditable to most boys of 6.

We evidently have here an aphasic child who but for the disturbance of hearing and of speech, of mimic, and perhaps of still other of the normal means of expression, would be able to do the mental work normal to his age. It will be in-

teresting at some later time to record the result of a systematic examination for aphasia, which I hope may be carried out later. The psychologist now resident at Lincoln writes me that this is "the only child who has asked me 'why' instead of trying to do what I asked."

Morton W., Age Seven Years.

Morton, like Harold, looked unpromising enough when admitted in that same July. But "brains will tell." And the natural play and work soon revealed by these two little boys refreshingly reminded us that there were levels of baby-land which the institution was sadly used to being without.

CASE 16.—Meningitis and Other Diseases in Infancy. Aphasia, with Defective Facial Expression and Motor Control. Good Intelligence and Volition.

Morton had lost his father and mother, the former dying of hepatic abscess, the latter of locomotor ataxia. There was defective hearing in the father's family. One child was stillborn and another died at 8 months. During the period before Morton's birth the mother was malarial and mentally troubled. There was difficult labor, and the child had severe icterus for three months with no gain in weight. Some days after birth he went into a condition in which his head was retracted and he had slight spasms. It has been supposed that he had meningitis. At 16 months he had measles followed by chorea. At 3½ years he had scarlet fever followed by left otitis media. There was some left paralysis in infancy, and the child stood first at 28 months and walked at three years. He was described as industrious, cheerful, neat, ill-tempered, and excitable, and had not been to school.

Physically Morton weighs 45½ pounds and is 45½ inches in height, with large and well formed head, fair vision, and hearing that is quite defective *as ordinarily measured*. Some but I think not all of the hearing defect seems to be due to "mental deafness." His walk is defective and his speech is even more so, tho he talks somewhat and understands what is said, but with difficulty. His facial expres-

sion is largely wanting and is apt to be abnormal when it occurs, and the carriage of the head is abnormal. No medical record is obtainable.

Morton's difficulty with language rendered impossible any rating with the Binet scale. As in the case of Harold we fell back on observation of the child's play, his manipulation of tools and other objects, and his readiness to meet various objective situations not involving speech: Turned loose to play in the laboratory he quickly showed the spontaneous activities of which his brain was capable. Spools, rubber rings, blocks, the T-square, etc., were promptly utilized in the construction of a railroad and trains. A derrick was rigged up, with pulleys. He foraged in drawers and cupboards and boxes for the necessary strings, blocks, and other pieces, and formed definite plans of construction which he persisted in carrying out, intelligently choosing and adapting resources to the realization of these plans.

To illustrate his conduct in the face of difficulty: He opened a heavy drawer full of sundries, to find playthings, but was told to close it. Demurring slightly, he then tried several times but the drawer caught at the sides and he called my attention to this fact. I insisted and he then pushed alternately at either end, moving it thus each time the very little distance that it would go. Again he called my attention to the unpleasant difficulty; but seeing now that I *must* have it closed, he tugged away with at least fifteen pushes regularly alternating at either end, and with a good many at the middle which helped a little, till half-inch by half-inch the drawer was completely closed, tho not easing up at any time. He had to push with all his might to budge it at all, and there was nothing apparent to make this anything but the very disagreeable and uninteresting task that we usually find it. Yet he showed no emotion or sign of im-

patience, nor did he even look around for commendation when he was at last successful.

Asked to button the eleven buttons of a long testing strip of cloth, his motor coordination was seen to be poor and at first he failed on the first button and demurred, saying "Hard." Then he laboriously did this one; and then one by one he labored with the others till all were done, demurring but three times and saying "Hard" a time or two. He showed that he thoroly disliked the job, as it was very difficult for him and occupied 7 minutes and 40 seconds. But there was no whining or show of emotion, and he worked on steadily. At the end he seemed satisfied, but without emotion, not even smiling. He made a gradual reduction of the time per button thruout the test. In the test for threading needles, after much difficulty resolutely faced he finally succeeded by *changing ends of the thread,* with evident intention.

Morton showed uniform good nature thruout all the hours of our testing. Even when urged to do difficult tasks that he disliked he never showed anger or whining. He would very briefly demur and would then attempt the task. Tho rarely smiling, his busy, unruffled way of meeting difficulties indicates a cheery attitude of content with people and with things. He enjoys a little teasing, and his laugh at a joke was hearty and apropos. His laugh, while almost uproarious in its heartiness, shows some abnormality of sound and of nervous control, and its facial expression is gross in character and not sensitively varied. I have not seen him smile in response to the smile of another, or mimic any facial expression of others. Nor have I seen his face show appreciation of other's approval, even when success had crowned struggles that were really heroic.

Here again we have a case of aphasia, showing difficulty of auditory appreciation along with difficulty of speech, mimic, and emotional expression, and with some general

motor incoordination. But the evident retardation of these functions has left essentially intact the intelligence, the will as persistent attention and application to the task in hand, and mental spontaneity and liveliness, with a normal utilization of the experiences of past and present. Morton's difficulty is a matter of the means of communication with his normal fellows and teachers; and unless given very special and most intelligent attention he will remain comparatively undeveloped and with certain inevitable perversions, just as occurs with neglected sense defectives.

Prudence S., Age Eleven and One-half Years.

The institution contains a very few children who are of approximately normal intelligence, and who are here in some cases because an improper environment has prevented their having proper care and development, in other cases because physical or sensory defects have caused them to need institutional care. A typical case is Prudence S., sister of Polly A. already described. The reader will recall the family history of insanity, intemperance, and feeble-mindedness. Prudence was admitted two years ago. It is stated that she did not talk until 3 years of age and that she had convulsions until near the time of admission. She has had none since.

CASE 17.—Insanity and Feeble-Mindedness in the Family. Convulsions before Admission. Intelligence Normal when Conditions are Favorable. Frail Body and Defective Vision.

Physically she is about 7½ pounds above weight and 3½ inches above in height, with a normal cranial circumference, almost normal lung capacity, and above the average strength of grip. Her hearing is normal but she has but one-fifth vision in either eye, with strabismus. Her ears are abnormally shaped and project markedly, the palatal arch is rather high, the skin is pale, chest is narrow, and the hands show irregularities of nervous control. The girl is physically frail, needing medical attention for various slight ailments, yet usually able to attend school.

In school Prudence is a model pupil, always sensible, overserious, rather "old-maidish" in her tendency to correct and mother others, and over-scrupulous and finical in the performance of tasks. She reads the third reader with expres-

sion and understanding, does simple problems in division but is not strong in number work, excels in spelling, drawing, manual and calisthenics work and in dancing. She makes good progress with piano lessons, but her aggravated myopia interferes with this as with other school work.

Mentally the Binet examination credits her with an intelligence normal to her years. She gave persistent and patient attention to the various tasks, and when circumstances remained very favorable her reactions in the tests were normal. There is, however, a latent instability with peculiarly strong tendency to confusion. For instance, in trying to reproduce a simple news item she made *absurd* errors, and also in trying to count by twos beyond a certain point.

The written tests show a normally legible handwriting. Capitals and punctuation marks rarely occur correctly or at all. She spells twiil (twelve), were (where), lik (like), flor (floor), contry (country), wish (which), brige (bridge), wile (while), oppen (open), and makes 7 or 8 other more usual mis-spellings in the three story tests. Her story reproductions give a fluent, connected story, much simplified but always progressing naturally. The total output is not large and the imagination shown is rather meager. She gives such "opposites" as tall-little, happy-mad, false-flys, like-love, glad-happy, thin-narrow, war-new, many-lots, above-down, friend-chum. Her weak showing in the A-test may be due in part to poor vision.

The tapping test revealed a peculiar weakness in the control of the left hand, a weakness not shown by the dynamometer. At first she was quite unable to tap at all with the left, and this hand had to have many times more preliminary practice than the right to reach a representative performance. When obtained the ratios to the normal were 149/169 with the right and 90/139 with the left. These experiments need to be repeated, as such a local weakening, whether temporary

or permanent, is significant especially in one who has had convulsions.

General observation in the institution finds Prudence to be steady, stable, and intelligent *when things go well,* but tending to "go to pieces" when circumstances become difficult or unusual, as on the occurrence of minor accidents. Her physical frailness is paralleled by a latent but real mental weakness which only a kindly and favorable environment can prevent from developing. Ideally, Prudence should be spared the "stigma" of life in an institution for the feeble-minded. Actually, she will fare best in the institution unless she can be furnished a permanent home which will shield her from the stress of guiding her own fortunes

Viola H., Age Twenty-three and One-half Years.

Somewhat similar to the last is the case of Viola H., a frail, diminutive young woman who has been in the institution for 7½ years. Her father and father's parents are all dead of tuberculosis. Her only brother died in infancy and her only sister is dead. Her mother is a seamstress and is very poor, but Viola was kept in the Chicago public schools until she reached the sixth grade.

CASE 18.—Tuberculous Family. Frail Physique. Weak Mental Span. Intelligence Normal to a Simple Environment.

Physically, Viola is about 20½ pounds below the normal in weight and 2½ inches below in height, with a cranial girth that is 16 mms. below. Her lung capacity is too small by 33 cu. in., and her strength of grip is about half what it should be, tho disproportionately stronger with the left hand. She has but one-fifth vision in either eye, with normal hearing.

Viola's face is asymmetrical, the lips are thick and are drawn markedly to the left, the chin is little developed and the mouth remains open, exposing the impacted and irregular teeth. The hard palate is very narrow and high, the left ear is placed considerably higher than the right, the head tends to be held to the right and the walk is rather peculiar. The nutrition is poor, with cold hands and feet. From time to time she has had to have recuperative treatment in the hospital, and shows decided tendencies to tuberculosis.

In school Viola reads fluently and with good pronunciation and intelligence, spells and writes well and composes letters normally. She does long division readily and correctly, and also some very simple problems in fractions. Her music teacher states that Viola is "slow but willing, takes an endless amount of practice and then is not sure,"

but seems to enjoy both practice and lessons. She is very good in basketry, making her own designs and shapes. She has shown rather exceptional aptitude for work in modeling and pottery, doing this work with understanding tho not capable of producing much, of herself. She is "easily discouraged and expects much help." She attends well to work that she likes, but is inclined to be peevish in calisthenics and gymnastics. She has an only moderate amount of general information, but talks intelligently about general affairs.

VIOLA H.

Viola passes all the Binet tests thru 12 years, except the repetition of 7 numerals. Besides she was able to state "differences between abstract terms of similar sound or meaning." Her mental span was frail, *usually* insufficient for even 5 numerals or 26 syllables.

In the written tests she used capitals and marks correctly except within her paragraphs, where they were usually omitted. Practically her only mis-spellings were inadvertent omissions or transpositions of letters. Her composition "makes sense" always and normally, barring an unusual statement or two. Her reproductions of stories show no variations from the text that would suggest imagination or constructive tendency, but they are ordinarily full reproductions with only an occasional mis-statement. Her flying-machine story of 131 words shows a little real imaginative ability: She flew low so she could see things, and saw children coasting on their Xmas. sleds. One was trying out his new dog for

a horse. She compares coasting with flying, etc. Her results in the written tests are rather superior to those of all the other children. The frequent "omissions" in crossing A's arose from her attempt to make one mark serve for several A's when found together. Her tapping rate is near the normal, with little irregularity of performance except that the left hand was badly controlled.

In all the tests Viola's replies and conversation were entirely normal and sensible, and she showed a normal appreciation of wherein she failed. She gave evidence of having an intelligence that worked normally within the simple sphere in which she is at home, and when no very difficult tasks were to be performed. But she gives evidence of *frailty* and *weakness* in her mental as in her physical condition, and this weakness appears in lack of control when under mental stress. Her home physician reported that her moral nature was "weak" on the side of sex, and that "if not restrained she was sure to get into trouble." Her low vitality and plain appearance of course lessen the latter danger. Viola will continue to need constant medical supervision, and it is again the case of a girl of relatively normal but frail intelligence and weak physique who should continue to find a home in the institution unless adequate and permanent home care and direction can be assured her elsewhere.

Clarence A., Age Twelve Years.

The "moral imbecile" is regularly a mental imbecile as well, and abnormal moral perversity is not found in isolation in any case that I have found at Lincoln or that I have studied anywhere. It is to be remembered, however, that children who are not deficient *mentally* will ordinarily not arrive at such an institution, whatever their morals. The question, therefore, of the possible isolation of moral perversion is prejudged for such institutions, and demands more thoro clinical study elsewhere than it has hitherto received.

CASE 19.—Morally Unstable. Intelligence nearly Normal. Thieving, Stubbornness, and Fits of Temper. A Case for Parental Discipline.

Clarence A. is one of our thirty-two selected "bright" children who is notable mainly for petty thieving and for truancy. Admitted in August, 1908, his home record shows that there has been some paralysis, heart disease, and nervous instability in his near ancestry. The father was intemperate and his mother's health was poor before the child's birth. Clarence is said to have been peculiar from birth, not sleeping well and having fainting spells and great displays of temper. He was pronounced feeble-minded by a physician. He had ear trouble, bad sex habits, and is said to have been destructive and stubborn and not to care for or fear anything. He began school very early, but "did not seem to learn."

Physically Clarence is over 8 pounds below in weight and nearly 2 inches below in height. His cranial circumference is 18 mms. below and he is somewhat inferior in strength of grip and in lung capacity, but with normal vision and hearing. His tonsils were somewhat enlarged and there

were nervous movements of the hands when extended. The medical examination found nothing noteworthy.

In school Clarence reads well and with understanding in the third reader, and knows the tables but does not divide, tho he can do some simple problems in fractions. He spells and draws well, was "original" in kindergarten work, and did well in calisthenics and dancing. He attends normally but gets on only fairly with others, being very stubborn. As his "worst faults" are mentioned "temper and stealing."

The Binet tests give Clarence a mental age of 11 years, showing but one year of retardation. He could not tell the time from a watch or clock, but distinguished line-lengths that differed by only one millimeter. He thought of and gave 71 words in three minutes, but about half of these words were suggested by similarities of *sound*. His responses and conduct during the testing showed intelligence, but he *lacked energy* in speech and action. He is polite and genteel in manner, with something even of the "aristocrat" in his bearing. He learns readily in starting with band work, and can doubtless go considerably further with school work. Unfortunately for our study the boy was early removed to his home.

This boy's thieving was inveterate, and this moral instability comes nearer to being isolated or the main feature in this case than in any other of the cases that were specially observed. But there is also the usual slight retardation of intelligence, and besides there is the truancy and marked stubbornness with fits of temper. It is a case of slight mental backwardness with moral instability, the whole amounting to hardly more than an extreme variation of normal childhood, and calling for adjustment by parental discipline with the intelligent co-operation of the trained teacher of a special class.

CHAPTER IV.

CLINICAL STUDIES OF BORDER CASES.

We have now studied one or more representatives of each of the main "groups" to which the thirty-five selected cases may be thought of as belonging, these groups being briefly characterized in Chapter V. The remainder of the cases, as presented in the present chapter, further illustrate the various phases of defect. The somewhat full presentation of many of the preceding cases, selected as more or less typical, makes it necessary, in the following, to discuss rather briefly some children who would quite repay fuller study.

Stanley D., Age Eleven and One-half Years.

Stanley D., a little Chicago boy who has been at Lincoln a year, is typically unstable morally and mentally. Nothing especially unfavorable is known of his heredity, but Stanley is said to have been peculiar from birth and "was not acting right from early childhood on." His head appeared small and forehead low, he did not talk until three years of age, and early began to lie and steal. He would also try to run away. He attended school more or less since his seventh year.

CASE 20.—Unstable Mentally and Morally. Thieving, Lying, and Violence. Defective Motor Control.

Physically, Stanley is 4 pounds above in weight and is nearly normal in height. His cranial girth is below normal to the significant extent of 33 mms. and the forehead is low with the hair encroaching upon it. The forehead is deeply wrinkled and the face has an expression that suggests cruelty or at least unrest. The medical examination showed no

physical stigmata except an adherent foreskin and a condition of bronchitis. He has later had a chronic purulent otorrhea on the right side, with discharge. He walks with head down as if concerned about things, has a peculiar scowl or frown by times, and seems over-serious generally.

In school Stanley reads monotonously in the second reader, can scarcely multiply by small digits, is awkward and uninterested in calisthenics, and is poor at dancing. He is said to be inattentive, but he makes an appearance of keeping busily down to work.

The Binet tests give him a mental age of 10½ years, another case of but one year of retardation. He could never repeat five numerals and could not count the value of stamps or "make change." He could detect none of the nonsense in sentences, and could make no definitions except in simple terms of use.

From time to time Stanley has been in trouble for stealing and lying. He has also run away at least once. More serious still, on two occasions he has struck playmates with rocks, on one occasion injuring considerably the eye of the boy knocked down by the stone. Questioned about the latter experience he first denied it variously, then admitted it; but in trying to tell why he did it he convinced me that he did not know himself. The boys had been playing "cowboy," and Stanley was excited and threw wildly. The other boy, he says, had hit him on the legs with a switch, "and it hurt." The boy who was struck says that Stanley did not mean to injure him, that he looked around suddenly or the stone would not have struck his eye.

It seems that lack of motor control rather than viciousness may be back of Stanley's violence, and indeed he seems to lack control of his imagination as of his actions. His facial expression is under no better management. He looks me in the eyes with a strained appearance of earnestness

which does not vary with my own expression and with the demands of the situation. I look up at him with a smile of relief from the fatigue of writing, but he meets my gaze with not even a faint smile in response. His over-serious face shows marked over-action of the frontal muscles, and a tortuous sort of corrugation seen especially when he tries to do mental work.

Further tests and observations were prevented by the family's removing the boy from the institution. Tho but a year retarded, Stanley's instability of neuro-muscular control will probably continue to put him at variance with society.

Milton J., Age Thirteen and One-half Years.

Milton is a typical truant and vagrant. Admitted in April, 1910, he is stated to be of alcoholic parentage on one side, with feeble-mindedness and tuberculosis in the family. The child is said to have wandered away since his third year. He was sent to school from his sixth year, but was a truant, was at a reform school later as a delinquent, and was there finally pronounced defective and sent to Lincoln. His mother states that the boy would "play hookey" instead of going to school and would stay away several days, apparently sleeping out when it was not too cold. She states that he went off continually, school or no school, and that "no one will keep him over night any more." He always looked up the worst boys he could find, and "won't work for nobody" as she put it. "As soon as he gets his breakfast he walks off and don't return till eight or nine o'clock." He craves tobacco and has chewed it since he was quite small.

CASE 21.—Unstable. Truancy, Vagrancy, and Thieving. Deficient in Motor Control and in Mimic.

Physically Milton is near the normal in weight and height, with a head that is over-large by 16 mms. of circumference. The head is developed mainly in the back and to the left, causing a marked asymmetry. He is a little below normal in strength of grip and in lung capacity.

The mouth is unusually small, the palate a little high, the ears are unlike and the right ear is pointed sharply. The fingers take distorted shapes when spread apart, contracting variously without his control or apparent knowledge. The visual acuity is normal, the hearing is quite defective in the left ear. Beyond a hospital record from pneumonia the medical findings are not important.

In school Milton is inattentive to his work and to his teacher. He can read only the simplest second reader selections, with effort and frequent errors. He does simple addition and subtraction, but is practically helpless beyond this. He is very unsatisfactory in manual training, as he will not stick to or finish any task. His drawing teacher was able to get some fair work from him, and he does well in calisthenics but requires firm control. He could name no state other than Illinois. Besides the Revolutionary War, he stated, the United States had the Black Hawk War and the "Civilized War." He does not know "what country they did fight last with."

Mentally Milton earns a rating of 11 years of mental age, with a retardation of 2½ years. When asked to write from dictation "The pretty little girls," he wrote it "The pettry lttle girles." He was weak on reproducing numerals. Thruout the testing his attention and interest were unfailing. He staid faithfully by his tasks, even when these required considerable effort, and he tried to please and accommodate. His talk was sensible and showed many marks of intelligence. In playing ball with me later he disregarded the pain of injured fingers, and played with enjoyment tho with less vim and energy than is shown by most normal boys. He made many commonplace remarks but no absurdities. He likes to "captain" the calisthenics class and does well on such occasions. At other times he is apt to keep the room in an uproar.

The secret of Milton's dissatisfaction with school and of his restless wanderings seems to lie in his defective motor control. In school I noted that when he was interested he kept making slight choreiform twitchings. All his movements seem to lack normal control. They begin and end suddenly. There is no gradual warming up or slowing down, but the look is sudden, the movement of hand or foot

starts and ceases without warning. His eyes have an odd look, and their furtive movements suggest those of a fox or wolf. Their expression does not respond normally to the gaze of another, is out of accord with the other's look and with the given situation. He looks either too fixedly or too shyly, with slight incoordination of the eyes and with a half-fearful expression. The facial expression is too sober and strained, and is badly inter-coordinated: The smile of the mouth may be apropos enough while the eye looks staring and cold. The incoordination of facial movements shows markedly when he is asked to watch an object moved before the eyes.

When reading or when writing dictation Milton was never still. To quote from my original observations, his "eyes close a little, head turns slightly to side, body straightens, eyes wink several times in succession," etc., typical of a stream of quick movements going on constantly, while he made errors at every line, backing up and trying it again with difficulty but with good effort. One can see that this must be fatiguing, and in the end work that is thus subject to constant error must bore the best of pupils.

Further observation and tests and the study of his continued thieving propensities were prevented by Milton's running away from the institution, and no more has been heard of him. It is an interesting case of an unstable child with strong tendency to vagrancy associated with criminality. The mal-coordinations and the kaleidoscopic shiftings of neuromuscular equilibrium have correlated with them an inability to persist in at least the school kinds of work, with a restlessness that must have its expression.

Hilda E., Colored, Age Twelve Years.

Hilda E., at the institution since February, 1909, is of unknown Chicago parentage. Deserted by her mother she was placed in the care of the Juvenile Court, and thus reached Lincoln. She was stated to have bad sex habits, to have a record of stealing, and to have been treated for "specific iritis" in an eye and ear infirmary.

CASE 22.—Unstable. Fighting, Stealing, Lying. Deficient Control of Temper and Movement. Keratitis.

Physical examination shows Hilda to be about normal in weight, height, cranial measurements, and strength of grip, but distinctly below in lung capacity. Her head has some irregularities, with forehead narrow and rather low and receding, and with the scalp thick and fleshy in front. The nose is low and broad, palate rather high, obliquity of the eyes not quite normal, ears small and abnormally formed. Medical examination has found nothing abnormal except "an acute keratitis of left eye, probably specific." This has become chronic and seriously threatens her sight, tho she still has one-half vision in the right eye and two-thirds in the left eye. Hearing is normal.

In school Hilda reads poorly in the first reader, adds and subtracts a very little, is "poor" in spelling, writing, and industrial work, but dances well. She gives only momentary attention to anything, gets on only fairly with others, and her worst school fault is stated to be her insistence on being the center of attraction. She is most restless, and "always sits on one leg or twisted around in her seat." She appears bright and lively, even spontaneous, but she does not get the work done. She is over-demonstrative of her affection for persons whom she likes.

The Binet tests give her a mental age of 8½ years, a retard-

ation of 2 years. She could not repeat 16 syllables, could not count stamps nor backward from 20 to 0, could not write a four-word phrase when heard, could not give the date even approximately, nor make change, name the months, or arrange weights.

Hilda has learned to write with moderate legibility, but cannot use writing to any purpose. In trying to reproduce stories I and II and to write of a trip in a flying-machine, she wrote 9, 6, and 4 lines respectively, being a hotch potch such as "a fat pig a hoig to leand a good heven Cand a sometime cand," etc. Instead of writing similars and opposites, in the tests for these, she either copied the words with strange transpositions and changes, or occasionally wrote some apparently unrelated word or series of letters. She crossed 49 and 77 A's in two minutes each, with no errors. Her tapping record counted to nearly normal, but she showed exceedingly poor control, tensing her fingers into knots, hammering the key, etc. She sometimes became so awkward and her muscles would become so tensely knotted that she could hardly continue tapping even when coached.

HILDA E.

Of a kind with these results of the tests for motor control is Hilda's conduct when crossed or angry. The attendants report that she has violent fits of temper in which she throws herself on the ground and butts her head, and she

sometimes kicks playmates severely and does them other violence. She continues her record of fighting and also of stealing and lying.

We have, then, a case of unstable motor and mental control shown in the almost convulsive manifestations in the motor tests and in the fits of temper and of violence; shown equally in her restlessness and weak attention, and possibly in her inability to mentally direct her movements of writing. With the deep-seated infection shown in the keratitis, with her bad habits sexual and otherwise and her inability to profit by instruction, she is evidently best cared for in an institution, in spite of the small amount of intelligence retardation.

Wilda C., Age Thirteen Years.

CASE 23. — Emotionally Unstable. Tuberculous Heredity and Condition. Keratitis. Fair Intelligence.

The home record of Wilda C., who was admitted in January, 1909, shows that eight of her brothers or sisters have died from causes not stated, and that two, with her mother and grandfather have died of tuberculosis. There is little else reported of her.

Wilda is above the normal by nearly 11 pounds in weight and 2.8 inches in height, but is slightly below in cranial girth, strength of grip, and lung capacity. She has but one-fifth vision in the right eye and two-thirds in the left, with normal hearing. Her forehead is rather low, the eyebrows are high arched and unite low on the nose, giving a peculiar oblique effect to the face. The two upper incisors are separate but well developed, the tooth on each side being poorly developed and small. The medical examination shows a poorly nourished body, oral breathing, narrow chest, and weak lungs. There is slight enlargement of the heart and some abnormality of its action. She was considered to have tuberculosis of the lung, with "corneal ulcer, probably tubercular." The latter condition is one of chronic keratitis which has clouded and caused irregularities of the cornea.

In school Wilda reads well in the fourth reader, does long division and addition and subtraction of fractions, and is said to spell well and to draw "normally." She is a little awkward in calisthenics and does but fairly in dancing. Besides she is making a little progress with history, physiology, and music, but finds geography difficult. She "attends" as well as normal children, gets on well with others, and her worst school fault is stated to be that she "likes to be made over" and "is jealous about getting her share of smiles."

The Binet examination gives Wilda a mental age of 11, a retardation thus of but one year. It was noticeable that she could not change 4c from 25c, could not reproduce 6 of 19 details read to her, nor detect incongruities in sentences. She could not construct a sentence of 3 given words and failed to rearrange the shuffled words of sentences. She volunteers a good deal of information learned in school, stating it correctly.

Wilda's good showing in the reproductions of stories I and II and especially in story invention, also in the A-test and in the giving of similars, corresponds to the findings with the Binet scale but would after all be weak for a normal child. The story invented, however, does show some imaginative ability and some power of using images to a purpose.

WILDA C.

Her writing is legible but primitive. She omits or misuses punctuation marks, uses the infinitive for the past tense, etc. Her composition is child-like, with primitive couplings up and repetitions of "and", and the occasional omission of a word apparently from distraction. Her spelling is normal but careless. Her thought is generally natural in its sequences, tho she made the statement "P begins with prevent and E begins with event," when asked to distinguish these words.

The tapping tests showed a normal total with the left and 26 below with the right. But the work was irregular, and showed defective control in the frequent knocking and hammering.

Wilda's actions in the presence of the opposite sex indicate that she has an abnormal deficiency of control of her

sexual nature, and she would seem to have bad sexual habits. Her attendant says emphatically that Wilda is "very fond of the boys" and that she is not very promising. She shows facile emotional reactions to boys and men, and tendencies to over-fondness in general. Her face becomes soft and without character as she looks up with an ever-ready smile which bespeaks notice and commendation.

We have here the case of a mentally backward girl with very moderate mental furnishings, but sufficient perhaps for a normal if simple life in society. But there is more to be considered than the intelligence. There is an abnormal lack of emotional control and an over-tendency to the things of sex, with little development of will or foresight. When one adds to this the tuberculous history and condition, and the deep-seated affection of the eyes which will long need medical attention even if it should spare her vision, it is seen that in spite of the small amount of intelligence retardation this girl, too, is well placed in an institution. My latest report received as I write states that she is "doing well but daily growing to be more of a flirt."

Fannie H., Age Fourteen Years.

Fannie H. has a pretty face and an ever-ready smile, and these are probably her strongest assets, often serving her as substitutes for thinking. She came to the institution in October, 1906, and was re-admitted in April, 1910. Born in Germany, she did not talk till three years of age, had a habit of hiding things and of running away, and was accused of "wanting to eat all the time." She was said to have given trouble when with her family and they wished to be rid of her, but little more is known of her home record.

CASE 24. — Dull, but Well Balanced and Pleasing. Appears Normal.

Physically Fannie has lagged behind her years in weight, height, and strength of grip, but is of normal cranial and lung capacity, and indeed is in robust physical condition as shown in her medical examination and to general observation. Her vision is good, the hearing was dull in one ear when the test was made. Bad home conditions may have caused the lagging in growth, as it was noted that after a prolonged stay with her home people she returned ill-cared for and much reduced in flesh.

In school Fannie reads "fairly" in the second reader, is "subtracting," and is doing fairly in industrial work, dancing, and calisthenics, tho awkward in the latter and in walking. She "attends" normally, "has a good opinion of herself," and her worst fault is stated to be "stubbornness."

The Binet tests showed a mental age of 9½, a retardation of 4 years. Any problems involving any use of abstract conceptions or the ideating of abstract situations were quite beyond her. She lacked ideas and was easily confused in handling what she did have. In general she seemed bored

at thinking, but would look up sweetly at me instead of making a try whenever some intellectual effort was called for.

In the written tests her writing is very irregular, but can be read. The lines are of all lengths, with capitals and punctuation marks at random. She wrote but little, showing no imaginative construction and making most trivial statements. She spells "ho" for "who," "lift" for "lived," "gard" for "garden," "bouj" for "boy," "brig" for "bridge," "dint" for "didn't," "siad" for "said," "spreank felte" for "Springfield." Reproducing "The children knew how to work the flying-machine," she writes, "And they new How too Work on the Mashin." The A-test showed many errors, and the tests for similars and opposites seemed beyond her comprehension. She showed one-third less than the normal rate of tapping.

FANNIE H.

The Binet finding of 4 years of retardation is thus confirmed by her lamentable failures in most other mental tests and by her very slow progress in school studies. Even if her age should not have been correctly stated by her people, her power to do mental work evidently lags well behind even her physiological development. But this little girl is pretty evenly balanced as far as she goes, and is able to make the most of her rather scanty resources. Whatever she attempts to do is performed with fair efficiency and promptness, and one does not note that she attempts but little. There is nothing

to attract unfavorable attention in her ordinary behavior, as she is socially companionable and ready to be more or less helpful, tho perhaps a little lazy. And it is thus not surprising that with her winning face and ever-ready smile she is often thought to be quite normal and to belong outside. As a matter of fact, if she had a good home she would certainly be cared for in it, and properly perhaps. With good home conditions from the first she might have shown less of mental retardation. But as things are, while on the physical side Fannie has reacted well to proper hygiene, mentally she has not made much progress; and I am inclined to consider this a case of fundamental defect of mild degree, showing mainly as mental dullness and inaptitude for any thinking that involves representations of the absent.

Socially, the danger of leaving such a girl without the supervision of an institution or of adequate home direction, with her winning ways, her physical vigor, and her marked incapacity for taking thought, is evident enough. And her "normality" is that of a much younger child, judged even then by the standard of the few things that she attempts rather than by that of the varied activities needed to live normally at her age.

Nora L., Age Thirteen Years.

Nora L., of whose home conditions almost nothing is known, was brought to Lincoln in February, 1906. A tall, slender girl, she is weak physically, dull mentally, and has an over-seriousness of manner and seclusiveness of attitude that would seem to make of her life a sad monotony.

CASE 25. — Dull. Poor Physique and Vision. Over-Serious. Mildly Emotional.

Nora is a little below normal in weight and 1½ inches above in height. Her head is 7 mms. below in girth, 10 below in breadth and 6 above in length, giving a noticeable disproportion. The head is narrow in front, with the forehead appearing more prominent at the right. The lips curve downward, middle incisors are separate, palate is rather high, ears asymmetrical, skin pale, and nutrition poor. There is considerable strabismus and an undiagnosed affection of the cornea, with a deforming prominence of the left eye and vision of but one-fifth in either eye. The hearing is normal. Two years ago she was quite frail and was placed on tonic treatment for tuberculosis. She has improved physically, but is still frail and is probably tuberculous.

In school Nora reads well in the third reader, multiplies by two digits and divides by but one, spells satisfactorily, does "good" work in drawing and "very well" in calisthenics and dancing. Her defective vision prevents her doing well in sewing. She practices faithfully at piano lessons and takes various parts in the entertainments.

The Binet examination gives Nora a mental age of 10½

years, a retardation of 2 years. The written tests show a handwriting that is irregular, with crooked words and lines and rather infantile characteristics. There is rarely a capital or punctuation mark. The mis-spellings, tho not frequent, are of interest: stad (statue), thouth (thought), granden (garden), enuth (enough), flled (fell), prise (present). Besides, she tends to use the infinitive or participle forms of the verb everywhere. Her thought seems to progress normally, tho simply, but she cannot readily put what she thinks into written sentences. The total output in these tests is very meager, rather below what the Binet tests would indicate.

NORA L.

In tapping Nora is 27 below with the right hand and 11 above with the left, being left-handed. In this test as in others she was passive, calm, with no facial tensions. With the more difficult of the Binet tests she tended to remain silent, trying but "stuck," her mind seeming paralyzed and

inactive, her eyes filling with tears and her lip quivering. This was repeated over and over.

The poor physical condition, very weak vision, and paucity of mental resources, with the over-seriousness of demeanor, render this case rather unpromising, tho recent school reports show some progress.

Harriet G., Age Eleven Years.

Harriet is a really bright and sweet little girl, a star at the school entertainments and a favorite with everyone. The question as to her normality has often been discussed. Admitted at the age of six or seven, her family record is unpromising. A grandmother of weak intelligence, a mother insane since adolescence, a father reported to have been "simple" and worthless, and the child herself apparently born out of marriage and brought to the institution after a severe attack of typhoid,—this sums up the story.

CASE 26. — Insanity and Feeble-Mindedness in the Family. Keratitis. Pneumonia. Bright and Attractive.

Physically Harriet is somewhat above normal in weight and height, slightly below in cranial girth, quite inferior in lung capacity, and nearly normal in strength of grip. There are no bodily stigmata and the head and face are well developed, but the front teeth show a rather inferior development. For several years Harriet has had serious trouble with her eyes, diagnosed as interstitial keratitis. This causes some corneal opacity and irregularity and at times threatens the sight of one or both eyes. Her vision is less than one-fifth in either eye. She also has "snuffles" continually and breathes thru her mouth, but has had no exploratory examination for adenoids. She has very frequent colds, gets infected easily in toe nails, fingers, etc., and shows low vitality. She is subject to gastric disturbances and sudden high temperatures, and worst of all has had severe attacks of acute bronchitis and pneumonia.

In school Harriet reads quite well in the third reader, does addition and subtraction and some of the tables, is not careful or neat in industrial work, but is graceful in calis-

thenics and dancing. She attends well to her teachers, but not so well to her work, of which she soon tires. Little wonder, in trying to do near work with less than one-fifth vision and no glasses! She gets on well with others and is not credited with any special faults or with any special abilities.

The Binet examination gives Harriet a mental age of 9½, while her age, based only on the estimate made when she was admitted, is between 10 and 11, most probably the latter. She was unable to name common pieces of money, could not change 4 cents from 25 cents, defined horse as "What you ride on, what rides a buggy, its got legs," and could not define any words in other terms than use. She could not tell the time from watch or clock. She attends well and makes normal adaptations so far as she attempts any, but tends to silence if the question is difficult and is over-mild and inaggressive in manner. Even when emotion occurs it is mildly expressed.

HARRIET G.

In the written tests Harriet's writing is irregular and primitive, often illegible. She uses no capitals or punctuation marks, and obscures her meaning by omitting words and letters, making also some illiterate mis-spellings. However, her simple sentences show speech habits that are normal for a young child, and it may be mentioned that she talks a great deal when well acquainted, though bashful otherwise. She reproduced correctly 22 and 26 details of stories I and II, but could think of nothing for the flying-machine trip. She crossed 17 and then 51 A's in successive tests of 2 minutes each,

with no errors. Ten similars were correct and 3 incorrect, 12 opposites correct and 1 incorrect, in the 11-minute tests for these. In tapping she went a little beyond the normal rate.

On the whole the mental tests establish the fact of a certain amount of mental backwardness, not amounting, however, to feeble-mindedness. In judging further of such a case, we have to consider it in its collective aspects. There is first an exceedingly bad heredity back-ground, and we are told of a mother fairly bright (getting "good marks" in school) till adolescence and then failing. Then there is very defective vision. And while this does account for some of the pedagogical retardation, the visual defect is based on deep-seated disease and will *continue* to be a retarding factor with possible blindness as an outcome. There is a respiratory system already weakened by repeated attacks, and a distinct tendency to lung involvement. There is an intelligence that is at best frail and distinctly lagging, and there is, also, an evident lack of self-assertion and self-direction, the child being entirely too easy-going and dependent, and giving little promise of being able to face the world for herself. On the physical, mental, and social sides it seems clear that this attractive child, little retarded as she appears to be, will long be in need of kindly directive control by an institution or other social agent. Her mental development will hardly continue very much further and her dangers will increase many fold.

Delia H., Age Fifteen and One-half Years.

Delia impresses one with her placid countenance in spite of its occasional choreic movements. A Chicago girl admitted in August, 1909, she has a history of having been picked up as a foundling, and was reared by a city family. Nothing is known of her own family. The child had nervous twitchings from infancy, and this was assigned as a cause of mental deficiency. She became addicted to self-abuse, and was notably lazy and gluttonous, would hide and destroy things, and would "run away from school and lie about it." Four years before coming to Lincoln she "lost the use of her limbs for a while, but recovered." She had measles, scarlet fever, and an operation for tonsilitis, but was generally considered to be healthy.

CASE 27. — Dull and Lazy. Steady-going, but Lacking in Mental Resources. Chorea with Heart Trouble.

Physical examination shows her to be nearly 23 pounds above in weight and slightly above in height. Her head is 36 mms. below in circumference, being more deficient in length than in breadth. She tests well above on the spirometer, and in strength of grip is normal with the right hand and disproportionately strong with the left. Her vision and hearing are normal. The palate is narrow and high, the lips are deeply creased vertically, the teeth are a little separated and not very well developed, the right ear has the Darwinian tubercle prominent. The shoulders are of unequal height and the bodily carriage and walk are slovenly.

Medical examination records a jerky and irregular respiration and a condition of the lungs that is otherwise not wholly satisfactory. The heart is enlarged and she has mitral regurgitation and chorea. Menstruation is irregular.

Delia reads satisfactorily in the fourth reader and does very simple problems in division. She can draw simple designs for Christmas cards, but is slovenly in clay modeling, lazy in industrial work and calisthenics, and awkward in dancing, her chorea seeming to interfere with the latter. However, I have seen the choreic movements disappear completely as she played the violin, tho they usually become more violent when she makes an effort. Her violin teacher thinks that her "nervousness" does not interfere with her music, but that she is lazy, tho a rather satisfactory pupil, nevertheless. She studies elementary history, physiology, and geography, and learns these lessons rather quickly.

The Binet tests give Delia a mental age of 11½ years, with a retardation of 3½ years. Her speech is normal. She could not represent to herself social situations suggested by the tests, and could do little with abstractions. "*Justice* is to do right. Ain't *justice freedom* too?" *Goodness* is "When you're good." *Charity* was unknown. She does not get excited and does not show any special tendency to confusion. To the limit of her resources she kept adapted, but the resources were not extensive. The choreic movements did not seem aggravated by the tests. In actual thinking they sometimes ceased, or were partially replaced by bulging of the forehead muscles, etc.

The written tests show legible but child-like handwriting. Occasionally there is very bad use of capitals, marks, and paragraphs, and some bad spelling. Usually her composition shows smooth and grammatical English. Imagination was but little in evidence, and her flying-machine trip showed her only some children skating, snow-balling, and coasting, and people taking children out on sleds.

Delia makes a nearly perfect record in the tests for asso-

ciation by similars and opposites, and she crossed 87 and then 100 A's with but one partial error, in tests of 2 minutes each.

Taking all the data together we find prognosis difficult from the lack of knowledge about the child's heredity and development. The apparent paralysis of five years ago is suggestive of trouble later, but may be incorrectly reported. The chorea, heart lesion, and weak lungs mark her as a girl that will always need medical attention. The laziness seems to be constitutional, perhaps part and parcel with the physical condition. She has such a paucity of mental resources as makes her one of the mildly dull feeble-minded. On the other hand her emotional steadiness and rather equable disposition make of her a girl who, with wise parental control and some careful attention to her bad sex habits, might ordinarily fit fairly well into home conditions. Such adjustment will not be wise until society renders impossible marriage or at least the bearing of children by such defectives. For the present Delia should be trained to useful activities in the institution.

Wendy J., Age Twenty Years.

Wendy, now a rather pretty girl of 20, came to the institution 11 years ago. Nothing is known of her family or personal history except that when admitted there were stated to be two brothers and a sister alive and mentally sound.

CASE 28. — Dull, with Occasional Outbreaks. Excels in Lace-Making and House-Work.

Physically she is nearly four pounds above in weight and 1.3 inches below in height, with a cranial circumference that is 24 mms. below normal and a cranial length that is 16 mms. below. The chin is receding and the thyroid is somewhat enlarged, but there is nothing else worthy of note and her physical health is considered good.

In school Wendy reads with fair fluency any reading matter that is comparatively simple. She does only the very simplest addition and subtraction, almost always failing in multiplication and she is quite unable to divide. Her music is like her arithmetic, she simply cannot learn it. After practicing for months at an easy violin selection, a simplest beginner's series of measures, and having lessons all this time, she was still quite unable to play it. It is in the manual room that Wendy excels. Here she makes beautiful lace with the lace machine. She is a little slow but is very neat and satisfactory in this work, always leaves the bobbins arranged "just so," and seems contented here. The girls in the manual room are said to "look up to her a good deal." She usually attends as well as normal children and gets on well with the girls and with her teachers, except for an occasional outbreak of stubborn resistance.

Mentally Wendy shows an intelligence age of 10½ years, a retardation of 9½ years. She could not define or distin-

guish terms, could not make change or arrange weights, and could not detect the nonsense in silly statements. She was shy and timid, with an unreadiness to undertake and a tendency to give up that is characteristic of the typically dull children. There was, too, the typical scantiness of mental resources, and there were no reactions that showed any *strength* of intelligence, but rather the tendency to win with a smile a way around the problems that needed mental grip for their solution. Abstractions were meaningless, and the ordinary grade work of a school would be for this girl a perpetual monotony and waste of time.

WENDY G.

The written tests show a handwriting that is very legible, though somewhat irregular and undeveloped. Capitals and punctuation marks are usually omitted. She forgets some needed words and loses track of what precedes as she writes further, though apparently her inner speech was all the time proceeding in normal sequences. Her story reproductions are extremely simplified, sketchy statements, omitting most of what should be given. Of "The Straw, Coal, and Bean" she writes: "In the vill live a lady one day she out to the garden to pict some beans for dinner

the starw slip out of her fingers and feld to the floor She put the beans in the pot one of the bean said it lucking I feld I would have been cook to death if she put in with rest of them pretty soon a tarlor come and saw what a poor fix the bean in."

Her output in the tests generally is very meager, though a performance which could be reduced to automatism, such as the A-test, could soon be fairly well done.

I have spoken of Wendy's occasional obstinacy. At rare intervals this has manifested itself as downright viciousness, as when with two other girls she deliberately planned to give a third girl a good kicking, and brutally carried it out. A dull mind is not by that fact a harmless mind, and outbreaks like the above are much less expensively adjudicated in an institution than in open society. Those who have long had charge of Wendy say she would never be able to live safely outside. And yet only recently an effort was made to remove her, by some one, it is stated at the institution, who is not herself of over-strong mentality.

On the other hand Wendy has won a reputation for neat bed-making and other work on the ward, and the success with which she has learned to do woman's hand work and housekeeping duties, with the contentment and right ideals that she is showing in these tasks, suggests where the emphasis should be placed in training these dull girls.

Casper H., Age Thirteen or Fourteen Years.

Casper is still another of the dull children who have little mental or moral coloring. The admission data are meager and do not state his age. He has been in the institution since 1902, and was evidently as much as six years of age when admitted, according to the statements of those who knew him then. His mother is said to have been mentally defective and "stupid as a worker," and the family was dependent, the boy being cared for in one of Chicago's charitable institutions.

CASE 29. — Dull and Infantile. Weak Heredity. Defective Motor and Emotional Control.

Casper is slightly above in weight and below in height, with a head that is a trifle larger and longer than the normal average. His performance with the spirometer and dynamometer is not quite up to par but he is disproportionately strong with the left hand. He has but two-thirds vision with the right eye and two-fifths with the left. His hearing is normal.

His upper incisors are separate but the teeth are fairly regular and good. The uvula is small and the palate rather high. The ears have large Darwinian tubercles. There is a general unbalance and lack of tone in the bodily carriage.

In school Casper gives no trouble on the side of discipline or morals, and gets on well with the other children. He is docile and especially amiable, a general favorite with his teachers, whom he assists in a variety of ways. However, he attends badly, is very distractible, and his "worst fault" is stated to be laziness and great restlessness. He sometimes "says little silly things" and is quite "babyish." He reads fairly in the third reader, spells well such words as occur in his reader, and is one of the three best in his class in simple

drawing work. He manages to work some problems in long division, but nevertheless could not divide forty by six or twenty by four, when tested. In other school work he shows no special ability or deficiency. I fear that much of his learning is rather wooden. When asked to read ordinarily easy matter not found in the readers he could not pronounce *course, varied, provided, consists, convenient, members, attached,* etc., and needed constant assistance to get through at all. Asked what is the capital of Indiana he answered "Minnesota." Asked what year this is he answers "Winter."

Casper plays second clarionet in the band, reads the music readily, plays well and learns selections with normal rapidity; but his musical ability is "below normal," and he lacks attention and is very distractible here as elsewhere.

The mental examination shows an intelligence age of nine and a half years, with a retardation of as much as three and more probably of four years. His speech shows such errors of articulation as *trick* for *creek, tree* for *three, de* for *the,* and some others, with very incorrect English in general.

The written tests show a handwriting that is infantile and irregular, but that can be read. The lines are at all angles, with no capitals or punctuation marks. Some of his numerous mis-spellings are a pon (upon), sone (some), an (and), flore (floor), coa (coal), where (were), watch (which), brig (bridge), acrose (across), taler (tailor), svede (sewed), warl (world), enft (enough), slaj (sleigh), fitying (fighting), settch (statue), dad (day), sed (said), wornen (warm), maber (marble).

He omits whole phrases that apparently were more or less present in his thought, as in the following examples: "Once a pon (a time) an old lady;" "She was putting (beans in a pot when) a straw fell;" "Once a (artist) works for years;" "Every bean had scar on them."

His output is very meager for all the written tests and

he shows a paucity of mental resources and a sluggish movement of thought. He could do fairly well in the orientation tests, but seemed too inexpressibly lazy and lacking in tone and energy to make more than the most necessary movements. His tapping rate was sixteen below with the right hand and twenty-nine below with the left. He alternated between a lazy tapping with a single finger, against which he had to be cautioned repeatedly, and a hammering method which several times deranged the instrument.

General observation shows Casper to be shy and un-aggressive, with a tendency to take refuge in infantile reactions. He has doubtless been "babied" a great deal, and does not seem to have thought of taking any other attitude. He cries readily when reproved, sits or walks with little tone in his carriage, and shows a constantly recurring shift and squirm of bodily and facial position and expression, causing various observers to call him restless, babyish, shy, nervous, unstable, etc. Some of this is merely bad habit. More of it seems to be the manifestations of a nervous system that has not grown to normal strength and stability and that gives him an untoned carriage, a weak-willed, lazy attitude, and a mentality that would answer for a much younger boy, that has even been thought normal by some who have known him, but that has lagged well behind his years.

Samuel J., Age Ten years.

This is a curious and interesting case which could have but little study as the child was early taken to his home. Admitted in 1909, Samuel's family would seem to be healthy. They are of Polish nationality.

CASE 30. — Enlarged Thyroid with Exophthalmos. Dreamer and Joker, who makes Little Progress in School.

Samuel was "peculiar from birth," had one convulsion at three years of age, did not begin to talk till his fourth year and was late in getting his teeth. He did not learn to dress and undress or to tie a shoe-lace, and he "ran away every chance he got." He showed an early tendency to play jokes, as when he is said to have climbed on the roof and stopped both chimneys. He was sent to school "several times but always ran away."

Physically Samuel is considerably below normal in weight and height, and is moderately deficient in strength of grip. His head is of about normal size but shows some asymmetry. The teeth are notched and the back teeth are mostly absent. The mouth is small, palate high, eyes exophthalmic, ears large with Darwinian tubercle prominent in the left. There is marked tremor of the tongue and the hands take abnormal positions on extension. The skin is pale and the muscles and genitals are not well developed. Vision is but one-half in either eye and his hearing is slightly defective on both sides.

Medical examination shows enlarged thyroid, with exophthalmos and marked irregularity of pulse rhythm. There is some cyanosis of the finger tips and the heart-sounds are not normal.

In school Samuel has never learned to read, spell, use numbers, or draw. He is not neat in kindergarten work and "dreams" to much to do well in calisthenics. He attends to

his teacher but seldom to his task. He gets on well with the other children and his worst fault is stated to be his "dreaminess".

The Binet examination gives Samuel a mental age of seven years, with a retardation of three years. He could not tell which was his right hand, did not know his age, could not copy a diamond shape nor give correctly two details of a news item read to him. He was unable to count stamps, or backwards from twenty. He makes infantile expressions, as when he said, "Rags can't tore, have to cut 'em," and "You can't tore rags." His articulation is somewhat defective.

He could not be taught to use the spirometer, because of his "fooling" and his ignorance together. Then he sat down with me and suddenly broke out with a vivid description of his mother cooking nice pork and cabbage, at home, and of the nice fire there with lots of coal; and his eyes brightened and he grew intelligently enthusiastic about these home scenes. This was all done, however, in a quiet, dreamy sort of way. In school he sits "dreaming" instead of working. I note that he watches me with interest when he thinks he is unnoticed. He seems to see the fun that there is in things, in his simple way, but he does not have normal control of his laughter.

In this case of mental and physical retardation associated with thyroid mis-functioning we find some interesting symptoms and traits quite other than those of the ordinary dull child. It is to be hoped that Samuel may come under further observation.

Kenneth M., Age Seventeen Years.

Kenneth is a little Polish dwarf who has been at the institution since March, 1909. As he sits at his desk in school he would be mistaken for a boy of nine years. Outdoors his peculiar walk, his wrinkled, wizened face and "old" manner, give him the appearance of a little old man.

CASE 31..—.Dull and Infantile. Dwarfed Physically and Mentally. Premature Senescence.

His father is but slightly over five feet in height and the mother is still shorter. They are simple, mild-mannered "peasant" folk, and appear to be healthy, as does Kenneth's brother, an apparently intelligent boy. Kenneth weighed but four pounds at birth and was ill most of the time till his tenth year. He "did not grow," did not begin to talk until his fourth year, and had diphtheria severely at five years. At seven years his mental peculiarity was first noted in his lack of memory and of comprehension. He spent about seven years in school, with little progress.

Physically the boy weighs but forty-nine pounds and is three feet eight and a half inches tall. His head is twenty-eight mms. below the normal in girth and twenty-one mms. below in length, but exceeds the normal breadth by seven mms. His strength of grip and lung capacity are those of a small child, and his rate of tapping is proportionately slow. His vision is defective in both eyes, his hearing is normal.

He has a very broad face, small mouth, irregular lower jaw and a uvula that is diminutive or wanting. His eyes are widely separate and seem small, probably the palpebral fissure is short. The skin is somewhat wrinkled and leathery. He is pot-bellied, the genitals are abnormally small, and there is a small right inguinal hernia.

In school Kenneth reads fairly in the third reader, adds and subtracts, and in other subjects does about the work of a

KENNETH M. AND PETER A.

ten-year-old boy. He attends well, gets on well with others, and is not credited with having any "faults". Every one notes his bashfulness. He plays second cornet in the institution band and his instructor states that in nine months' work he has only fallen about one month behind the normal progress, but that he is slightly below normal in musical ability.

In the Binet examination Kenneth earns a mental age of nine with a retardation of seven and a half years. He was interminably slow and hesitant in his reactions, and infantile in his speech and manner. His responses are weak, with little spontaneity or self-assertion. He is extremely sensitive,

and is about as frail mentally as he is insignificant bodily. His mental ways as well as his appearance and walk impress me as do those of a feeble old man who is not very sure of himself in anything.

The attempts at story reproduction and invention and at giving opposites and similars show the same feebleness of performance. He writes quite as a little child draws, giving only some main lines of his thought with glaring omissions as viewed from any logical standpoint, just as in children's drawings. What he writes is but a sketching *accompaniment* to his thought, simplified to the last degree, but suggesting after all that his *thought* has had a natural sequence. Indeed the latter is the case more often than would appear from *hasty* glances at these children's compositions.

His spelling is fantastic. Examples are *wanon* for *woman*, *togeater* for *together*, *wetter* for *water*, *staces* for *statue*, *chat* for *cheeks*, *begert* for *began*, *chidren* for *children*, *agent* for *again*, *whent* for *went*. He uses few capitals or punctuation marks, and these are mis-placed.

Further interpretation of this as of many of the other cases is advisedly postponed to a later time. We need to have many careful studies of similar cases, and the observations should be continued through a term of years. What is the natural life cycle of such a child as this? What of the many lives that seem born to run a brief and "telescoped" course, physically and mentally, amounting even to juvenile senescence? What of the "going back" so often reported in the institutions and not always a matter of epileptic deterioration? We shall hope that the life-courses of typical cases will be studied and followed with care, for it is only from such bases that valid conclusions are to be drawn.

Fritz A., Age Twelve Years.

Fritz is a slender, dark-eyed boy who meets you with a peculiar, fixed gaze that seems to express the deepest interest, but is probably rather of the nature of an automatism. He belongs to the dull group; but his voice for singing, his interest in hearing and re-telling stories, and his petty thieving tend to give color to the case.

CASE 32. — Dull and Infantile. Thieving and Lying, but without Malice.

He has been in the institution for two years, coming from Chicago. His heredity seems to be very fair but he is stated to be the seventeenth child, twelve of the children being "dead babies." Fritz was born prematurely at seven months and is said to have weighed but two pounds! He was always delicate and backward in growth and did not begin to talk until he was two years of age.

He is more than four pounds above in weight and one and three-tenths inches above in height. His head is nineteen mms. too small in circumference, the deficiency being mainly in breadth. His spirometer test is a little above the normal, and in strength of grip he is not far from normal but is disproportionately strong with the left hand. His vision and hearing are normal.

The upper teeth are separate and notched, but in fair condition. The uvula and soft palate are defective. The nails are unusually short. The bodily attitudes taken suggest lordosis. Medical examination adds only that his peripheral circulation is not very good.

In school Fritz reads pretty well in the first reader, adds and subtracts a little, and has reached his fifth table. His teacher is well satisfied with the simple work that he attempts in spelling, drawing, manual work and calisthenics. He is a

good dancer, "attends" well, and is only troublesome by his petty thieving, which he "lies out of" when possible. His attendant reports that he is "kind of sneaking" and that he "steals a lot." He assists in the entertainments, singing with a rather sweet voice; and he amuses by telling stories of what he sees in the institution's picture-shows. His tales, however, do not bear verification very well.

FRITZ A.

Mentally Fritz tests to the level of seven and a half years with a retardation of three and a half years. His speech is slightly defective. He worked twelve minutes trying to put together again the two pieces of a rectangular card that had been cut diagonally and separated, and he failed in the end. He frequently made incongruous and rather silly replies, answering "twenty-four" when asked how many fingers on both hands, answering "Saturday" when asked to give the year, and saying "twenty-two" for "four" when counting by twos. "Take my picture taken Saturday" was his substitute for "Take my picture Saturday." On another occasion in telling of a stray dog he said "His name's Charlie Francis, we call him a dog." During the testing he dived into drawers and cases in spite of commands to let things be, and teachers say that he does this in school and that he steals "right and left." He did not steal in this laboratory-rummaging, but seemed to rummage as a sort of automatic necessity, mixed with some curiosity.

His tendency to automatism appeared in his association reactions, twenty-one in the one hundred trials being made in exactly his median time of two seconds. Sixty-six times he reacted with phrases or sentences, all but two being of the nature of definitions. His associations are very simple, rather puerile and naive throughout, but they are nearly all naturally related to the stimulus, not senseless or bizarre.

Fritz writes legibly, but utterly failed to use writing in the tests that required it. When permitted to reproduce one of the stories orally he told a pleasingly fluent story, short and in the manner of a young child, and not very correct, but with a simple harmony of ideas that hid the actual confusion of memory.

He merely *copied* the opposite and similar lists. When asked to arrange the photographs of our buildings as they stand he placed them in two straight parallel lines along one edge of the table. He steadily and rapidly increased his speed of crossing A's and of placing the form board blocks, from very weak beginnings. The tendency to automatism here has a chance to exercise itself, without the necessity of much real learning.

In general the tests and observations show us a child who is dull and infantile, with few ideas and these confusing easily; with rummaging and pilfering habits that are little removed from the un-moral ways of a very young child in its relations with property; with a general feebleness and immaturity of mental performance that seem of a piece with the history of premature birth and weakness in infancy; all indicating a condition of congenital defect that will not be outgrown. He can be made useful and happy under permanent direction in some well-chosen industrial occupation, and in an environment where he need not be held to the adult standards as to relations with property and facts.

Vincent C., Age Fourteen Years.

Vincent, another of our dull boys, has been here since 1904. His mother was but fifteen years old at his birth, and it is stated that she was epileptic. The home record gives little more except that it seemed impossible for the child to remember, and that he was untruthful and had "a tendency to take anything he sees whether of value of not." He attended school since becoming of school age.

CASE 33. — Dull, with Special Difficulty in the Use of Language. Physical Stigmata. Thieving and Untruthful. Normal Work in Music.

Physically Vincent is slightly above the average for his age in weight and height, and is sixteen mms. above in cranial circumference. His lung capacity is approximately normal, but he is somewhat inferior in strength of grip. The right eye has but two-thirds vision, and there is strabismus. His hearing is normal. His head shows some asymmetrical irregularity, the lower lip has a deep median vertical fissure, the upper incisors point toward each other decidedly and are a little separate from the others, and the lower middle incisors are not well developed. He has a diminutive uvula, short nails, and stubby fingers that are over-tapered toward the ends. He has not had a medical examination, but appears to have good health.

In school Vincent has most trouble with reading, being in the second reader class and poor at that. He does some problems in multiplication and division and is reported "satisfactory" in spelling, drawing, industrial work, calisthenics, and especially in band work. He attends well in certain subjects and badly in others, the personal relation with the teacher seeming to have most to do with this. He plays solo horn in the institution band, is an "excellent sight reader" with

"normal musical ability," and from Thursday to Sunday will learn a new selection to play as a solo for the chapel service. On the other hand Vincent's attendant finds him to be a great disappointment. He seemed to be one of the brightest boys when he came, but has "turned out to have little sense," "not so much as he had." Besides, he has a reputation for thieving.

The mental examination gives Vincent an intelligence level of ten and a half years, a retardation of three years. His speech is defective for certain sounds. His reading is all but impossible. He could not detect the nonsense in silly statements, could not construct sentences which would use three given words, etc. He tends to remain silent, giving up the task if it is difficult. He shows no spontaneity, has to be stirred to thinking and tends to lapse into a condition in which he seems to be complacently void of ideas.

He said he passed through several "countries" on his way here, but could not name any town that he passed. He knew the name of his home town but had no idea where it was. He talks in a very confused way of his pre-institution experiences. He is apt to gaze at one fixedly without speaking when one would normally say something. His teachers report that he has silly ways of laughing and talking, and that he lies and uses profane and obscene language.

The written tests reveal mis-spellings and mis-writings that amount to a form of agraphia. Much of the writing is utterly illegible and the lines deviate from the horizontal by as much as forty degrees. He writes *marmes* for *marble*, *shicks* for *cheeks*, *read* for *red*, *huir* and *hire* for *her*, *bift live* for *wife lived*, *scurk* and *curk* for *struck*, *bengap* for *began*, *crow* for *grow*, *iurn* for *turn*, *moom* for *woman*, *pech* for *piece*. These are but a minor part of his mis-writings. Yet so far as his writing can be read it indicates that his *thought* has been proceeding naturally, if simply, but it has

been obscured by his defective means of expression. There seems to be a fundamental defect of language which may account for much of Vincent's trouble with and dislike for his school work. It may possibly account, as well, for his confusion of certain memories.

We have here a boy who has some resources along with some decided defects. Much may be done for him by utilizing the former and minimizing the effects of the latter. The defects, however, seem to be part of a fundamental lagging in development which I am not sanguine of seeing removed by any treatment.

David F., Age Nineteen Years.

David is one of the institution's steadiest and most reliable boys, here since June, 1902. His large head, short stature, slow and even gait, make him a familiar figure about the institution. There is no record as to his family, and we know only that he had been in one of Chicago's charitable institutions, that he was in school three years, and that he was considered to be hydrocephalic.

CASE 34.—Dwarfed and Apparently Hydrocephalic. Dull, but Well-Balanced. Industrious and Trustworthy. Lacks Self-Direction and Spontaneity.

Physically he is about forty pounds below the normal in weight and 8.7 inches below in height, and of stocky build. His head measures thirty-three mms. more than the normal circumference, and is asymmetrical in total configuration while fairly regular in details. He shows seventy-six cu. in. less than the lung capacity usual to his age, and his strength of grip is one-third less than the normal. Vision is but two-thirds in either eye, and his hearing is slightly dull on the left.

His lips are thick and his palate is square-angled, flat, and broad. The palpebral fissures are not large, the skin is dark, there is slight lordosis, and the general body balance is not very well maintained. There has been no medical examination, but he has been considered to be healthy.

In school David reads "very intelligently" in the fifth reader, works problems in fractions and even some in "Interest," is good at spelling and fair but not neat in drawing. He is awkward in calisthenics and in dancing. In manual work he is very satisfactory, "has ideas" and uses them in arranging his work, chooses the right tools and goes ahead using them with skill. He recognizes his mistakes, of him-

self. He shows much interest in history, attends well, gets on well with others, is trustworthy, cleanly, and "never gets excited." He plays solo B flat clarionet in the band and orchestra, makes about normal progress here, and "will be

DAVID F.

a good sight reader and a good clarionetist," to quote his instructor.

When questioned David readily told me the capitals of California, Texas, Illinois, and the United States, the names of the largest and the smallest ocean, the boundaries of his own state, the name of the largest city in California, in Illinois, and in the United States, etc. He said the Revolution

occurred because England would not let the colonies send men to Parliament to help make laws. His answers were given in a uniformly intelligent manner.

Fairly informed and well-adapted as he seems to be in the knowledge current in the school, the request to do a few simple operations with numbers gave a significant kind of failure: Asked to multiply $20 \times 4\frac{2}{3}$ he was completely confused and finally gave as the product $116\frac{2}{3}$. He divided a five-place number by 23, correctly enough until he obtained a remainder of 16, which he added to the quotient as .16. This does not mean that David cannot *think*. He daily proves that he *can* think in the shoe shop and manual training room. But it does show that with these abstractions thinking was at least very difficult for him.

Examination with the Binet scale gave David a mental age of eleven and a half years, a retardation of seven and a half years. He was steady, without a trace of confusion or emotion. Even the presence of a roomful of visitors did not affect his responses. On being partially re-examined later he gave about the same results and with the same equanimity. He shows some distinct defects of articulation, but otherwise his reading of an ordinary page was fluent and was practically without errors, though with a reading-class drawl. His reactions in these tests were sane and sound as far as his mental resources permitted him to go, but he was not very spontaneous or able in his thinking, and was slow and easy-going.

In the written tests his handwriting is rather awkward and scrawled, but is fairly legible. The capitals and marks are usually correctly placed, and he rarely mis-spells. His composition shows logical and natural sequences thruout, but with no originality anywhere, except that in making up a story of the trip in a flying-machine he reviewed a few geographical points that one might cover in such a trip. The

results in all these tests show steady, effective work of moderate quantity and quality, on the whole hardly stronger than his Binet level would suggest. Visual defect may have had to do with the frequent omissions in the A-test. His abnormally slow rate in tapping with either hand reminds us of his awkwardness and slowness of movement in various kinds of activity.

David's phlegmatic disposition and trustworthy moral character give him a great advantage in making social adaptations. He has worked faithfully at shoe-making until he practically knows the business in its simpler details, and he is inclined to follow it as a trade.

We have here a boy who is but very little below the borderline of feeble-mindedness, and who is so happily balanced in his reactions and conduct that his readiness to conduct his own affairs is apt to be over-rated. He proved the latter by a test of his own contriving: Prompted probably by the example of more restless spirits rather than by inherent discontent, he ran away and remained away for some little time. But he was unable to "make it go" or to know what to do, though abundantly able to earn a living at shoe-repairing or at other work. He was finally returned, has seemed to be more contented, and is doing well.

Such a child must be trained to a self-supporting occupation, must be furnished permanent, kindly, directive control, and must in some way be prevented from reproducing his kind. At present, institution life is the solution. But children of this grade can seldom be retained in institutions; and for still other reasons society should undertake the task of adapting and caring for such children *in their habitat.* Social agencies in the home city should be fitted and empowered to exercise the necessary control, and these agencies

together with special schools must solve the problem of fitting such children to render useful service in their natural environment. Under such a regime David would support himself in society as a contented shoemaker, would help to entertain the community with his music, and would be made to live the life of a useful if humble citizen.

Theresa H., Colored, Age Sixteen and One-half Years.

The case of this colored girl is of interest because she has shown, in the tests, a stronger mentality than have any of the others, and has earned the right to be grouped with certain classes of normal children.

CASE 35.—Practically Normal Intelligence. Musical, and Skillful at Work. Sulky in Manner, with Outbreaks of Stubbornness. A Problem of Social Adjustment Outside of Institutions.

She came to Lincoln from one of Chicago's charitable institutions, and nothing could be learned of her family. She was born in Kansas, was inclined to be disobedient and spunky and at times refused to work. She amused herself by reading and had been in school two years. She tells me herself that she was first in a Chicago Home for the Friendless, then in an Industrial School till she finished the fourth grade work, then in a private home till she finished fifth grade school work, and was then placed in the charitable institution whence she came to Lincoln. Here she has worked in the laundry forenoons and attends school afternoons, taking only sewing, music, and calisthenics.

Physically Theresa is ten pounds heavier and an inch taller than most girls of her age. Her head has twenty-two mms. more than the normal circumference, the excess being in the unusual development of the forehead, which projects far beyond the eyes. The jaws also project well forward, the base of the nose is low, the lips are thick, the thyroid is slightly larger than normal. She has a slovenly, untoned carriage in walking and when seated, but shows no other bodily defects. Medical examination revealed some impairment of the right lung, but her health is generally good. Her lung capacity was twenty-nine cu. in. below the normal,

but in strength of grip she exceeded the normal with the right hand, and her left was three kilograms stronger yet than her right, though she is not left-handed. Her vision and hearing are normal.

In school she gets on well with others and attends as well as normal girls usually do. In the calisthenics class she is called the best pupil. Her violin teacher is very proud of the progress that Theresa makes. She likes her music and "sticks to it," learns her pieces aptly and well, and for a good while has played violin selections in the school entertainments. In the sewing-room she does her work beautifully. She works slowly, but the work is of fine quality and she readily catches new ideas about it. She is very quiet, talks pleasantly with the girls but not with others, nods her head or hardly replies when spoken to by her teachers, and regularly maintains a sulky attitude and manner. Sometimes she has to be coaxed to go to her class exercises, but she goes. The girls all seem to like her in spite of her color and her sulky manner.

THERESA H.

In the mental examination she passed all the Binet tests through twelve years, passed the first paper-cutting test and

the test for opposites, and earned half credit in another of the tests for fifteen years and above. She was given only four of these *higher* tests of the scale, as this part of it was not yet formulated. Her responses were intelligently given and showed absolute steadiness and control.

In the written tests her handwriting is legible and normal. Every word is spelled correctly, including such words as *pedestal, beautiful, statue, Christmas, Court House, quarrel,* and *prettier.* She uses few capitals and marks. Her composition is not infantile though fairly simple, and shows normal sequences generally. In one place when telling of the bean's narrow escape from death she makes him say, "I have just escaped a narrow death." She is too slow to give a very large output in the story reproduction and invention, but what is given is of normal quality though showing but little imagination. She wrote ten opposites in the first minute of the test, and wrote all of the opposites and similars correctly. She crossed 95 A's in two minutes at the first trial and all of the 100 at the second trial. She made no errors here, and gave no incorrect details in reproducing stories. All this speaks well for the normality of her intelligence.

The attendants find Theresa to be a most capable laundry worker, who does nicely the finer as well as the heavier ironing, and is able for "the work of an attendant" and who generally works pretty well. But by times she becomes sullen and stubborn, and may refuse to work. In these moods she has even gone so far as to take a hot knife and brand other girls, causing, however, only superficial burns and probably not intending to injure them seriously.

It is the case of a girl whose intellect is of a strength to float her at work in society; whose intellect is not only of sufficient quality but, unlike that of Prudence S. and Viola H., it is not *frail,* does not show tendencies to confusion. How-

ever, in the levels above twelve years of mental age, defects when present are apt to manifest themselves on the side of the feelings and the emotional control, in will and action and in the social relationships. With Theresa there is some abnormality in all of these. She works too *slowly* for the pace of life outside, does not get very much done in spite of her good quality of performance, and rightly or wrongly is really accounted to be lazy. She has a dogged, sullen attitude, with difficulty in maintaining normal social relationships; and allowance must constantly be made for these peculiarities, allowance, however, which is not so readily granted outside of such institutions. While not explosively emotional, Theresa has a "sneaking way of getting even" and of getting out of things, and her abnormal sulkiness could easily be transformed into viciousness.

Still, this girl has quite as good a mind as thousands of colored girls who are making their own way outside. She is not "feeble-minded" in any technical sense, and I should like to see her tried at work outside, if possible under probationary direction with at least the privilege of return if that should seem best.

CHAPTER V.

TABULATIONS OF DATA, SUGGESTED GROUPS, AND LINES OF TRANSITION FROM FEEBLE-MINDEDNESS TO NON-FEEBLE-MINDEDNESS.

Some of the measurements and tests have been made on practically all of the cases. The results of most of these, as far as they lend themselves to numerical statement, are brought together in the tables of Figs. 31-35. It is to be remembered, however, that the purpose of these studies has been clinical and not statistical; and for the most part it is better, for the present, to refrain from making generalizations upon the averages stated. Many of the tests have been sufficiently described in the studies themselves, or are already familiar from other sources. I shall here state briefly the conditions and norms observed in certain of the tests and measurements, information as to the others being easily accessible in the manuals of tests.

The Binet scale was used in the form published by Binet in 1908. Dr. Goddard is doubtless right in considering that this scale measures the amount of retardation about as correctly as does any later revision. It includes tests for reading, writing, memory for what is read, etc., which are sometimes referred to in these studies, and which are not in the revised scale. Their nature, however, is doubtless sufficiently clear from the references to them in the studies. Reliance has not been placed on the old tests for the *thirteen*-year level, which were too difficult, and which in any case were seldom reached by our children. The tests were applied essentially as directed in my syllabus of them, published in the *Journal of Educational Psychology* for October, 1910.

Fig. 31.

DATA ON BORDER CASES—MALES.

Case	Age	Binet Age	Wt. lbs.	Ht. ins.	Cr. C. cms.	Cr. L. cms.	Cr. B. cms.	Spir. cu. in.	Dyn. R.	Dyn. L.	Vis. R.	Vis. L.	Aud. R	Aud. L.	Tap, R	Tap. L.
C. H.	13	9½	3.	.8	.6	.4	.4	6.6	5.4	1.	.66	.4	N	N	16	29
C. A.	12	11	8.3	1.9	1.8	.6	.6	18.9	4.7	3.4	N	N	N	N	----	----
D. S.	11½	10½	4.6	.4	3.3	----	----	----	----	----	.66	N	N	N	----	----
D. F.	19	11½	33.9	8.7	3.3	1.3	1.1	76.2	17.9	15.2	.66	.66	N	D	28	43
F. N.	13	10½	6.0	1.1	1.6	.1	.4	27.4	4.6	4.	N	N	N	N	18	21
F. J.	11½	10	.1	.9	.4	.1	.1	22.2	N	.8	.66	.8	N	N	8	19
F. A.	11	7½	4.2	1.3	1.9	.2	.9	8.3	.8	1.8	N	N	N	N	----	----
G. J.	16	11½	14.9	2.1	1.4	.7	.1	14.3	15.4	13.4	.4	.5	N	N	30	28
J. H.	14	8½	17.9	3.3	.2	.3	.3	32.1	3.4	.2	.66	.66	.66	.66	15	12
K. M.	16½	9	73.1	21.2	2.8	2.1	.7	136.2	31.3	26.	.5	.66	N	N	39	35
M. E.	36	11	3.8	2.4	2.2	1.	.2	23.8	5.	3.9	.66	N	N	.88	19	23
M. J.	13½	11	1.3	1.	1.6	.9	.1	11.7	4.4	5.4	N	N	N	.5	----	----
R. P.	14½	9	1.	.3	2.5	1.2	N	3.5	1.9	1.	.66	.66	N	D	24	23
S. J.	10	7	10	4.4	.1	.1	.4	----	4.5	3.6	.5	.5	D	D	----	----
V. C.	13½	10½	3.2	.4	1.6	.8	.3	1.7	4.4	4.4	.66	N	N	N	20	17
Av. Boys	15	9.9	8.9	2.8	.5	.16	.09	19.7	6.7	5.0	D Cases 11		D Cases 5		18	20
Av. Girls	15	10.4	3.8	.14	.74	.26	.04	4.0	.74	1.0	10		4		15	10
Total Av.	15	10.1	2.5	2.1	.62	.21	.02	7.8	3.7	2.0	D Cases 21		D Cases 9		16.6	15.2

Note.—Heavy type indicates amount that the measurement fell short of the normal average, except for Vision, Hearing, and Binet Age, where all numbers indicate the measurement itself. Light type shows excess.

Fig. 32.

DATA ON BORDER CASES—FEMALES.

Case	Age	Ment'l Age	Wt. lbs.	Ht. ins.	Cr. C. cms.	Cr. L. cms.	Cr. B. cms.	Spir. cu. in.	Dyn. R. kils.	Dyn. L. kils.	Vis. R.	Vis. L.	Aud. R.	Aud. L.	Tap. R.	Tap. L.
B. A.	12	9½	6.2	.3	.3	.4	.8	13.5	.1	2.2	.5	.4	N	N	3	N
B. N.	14½	12	6.5	2.	1.	.5	.3	38.2	5.1	5.	.4	.4	D	N	22	15
D. M.	22	10½	24.3	1.	1.2	.6	.5	45.1	.3	.3	N	N	N	N	--	--
D. H.	15	11½	22.8	.3	3.6	1.7	.7	27.8	N	4.6	N	N	N	N	----	----
F. H.	13½	9½	12.4	6.9	.2	N	.4	2.1	5.	3.3	N	N	D	N	25	19
H. A.	18½	10½	3.	1.2	3.4	.8	.1	49.3	8.1	7.2	.5	.5	N	N	13	9
H. G.	10	9½	9.7	2.8	.3	.3	.8	27.9	.6	.8	.2	.2	D	D	9	1
H. E.	11½	8½	.1	.2	.1	.7	.9	17.1	.4	1.4	.5	.66	N	N	6	11
M. G.	16	11½	4.4	3.4	.5	.8	.9	20.8	5.2	2.1	.5	N	D	N	----	----
N. L.	12½	10½	2.8	1.5	.7	.6	.1	20.5	2.6	5.7	.2	.2	N	N	14	2
P. A.	13	10	14.9	.3	3.8	.6	1.9	16.6	7.2	4.6	.2	.66	N	N	14	22
P. S.	10½	10½	7.7	3.6	.3	.3	.4	3.2	6.6	3.5	.2	.2	N	N	20	49
T. H.	16	12½	10.3	1.	2.2	.8	.6	29.2	3.3	8.4	N	N	N	N	----	----
V. H.	23	12½	20.7	2.6	1.6	.6	.3	32.9	16.7	12.2	.2	.2	N	N	9	7
W. J.	20	10½	3.8	1.3	2.4	1.6	.3	35.9	1.3	2.3	N	N	N	N	----	---
W. C.	12	11	10.7	2.8	.7	.4	.9	6.5	1.1	1.7	.2	.66	N	N	26	1
W. D.	11½	7	11.1	4.9	2.4	.6	.4	33.5	3.6	.1	.88	.75	N	N	46	29
Av. Gls.	15	10.4	3.8	.14	.74	.26	.04	4.0	.74	1.0	D Cases 10		D Cases 4		15.4	10.5

Note.—Light and heavy type used as in preceding table.

The norms used in the tables of Figs. 31-32 are taken from the Chicago Child Study Reports, with the exception of those for cranial measurements, which are from West and MacDonald as given by Whipple. The cranial measurements are those for greatest circumference, greatest length, and greatest breadth, measured with steel tape and the Smedley cephalometer. The spirometer tests were made with the ordinary wet spirometer, counting the best in three trials. The Smedley dynamometer was used, counting the best in three trials with each hand. The tapping was with the Jastrow key and the counting register was used, checking for errors by using the kymograph or by careful observation. Both the Snellen and the McCallie cards have been used for testing vision. The McCallie audiometer was used for some of the cases, but the results tabulated are those for practical normality shown in hearing low conversation or whispering, at distances established as norms. The results for case P. S. are not counted in making up the averages for any of the tables, as it was desired to know the averages only for children who were found to be defective in intelligence.

In Fig. 33 Story I is of "The Marble Statue," given as directed in Whipple's Manual. It contains 166 words and sixty-seven "details." Story II is of "The Straw, the Coal, and the Bean," and contains 568 words and 200 "details."* It was read to the children as for Story I, and the results were treated similarly, in each case allowing twenty to twenty-five minutes for reproduction. In almost no case was more time desired.

*This is taken from a supplementary reader, "Sixteen Stories," published by A. Flanagan Co., Chicago. It is a simply told tale of the escape of these worthies from the pot and fire of an old woman; of their recounting their adventures and journeying together to a stream, where the straw and coal met disaster while the bean laughed till she burst her skin. She was sewed up by a kindly tailor, but still bears the scar.

MENTAL TESTS OF BORDER CASES.

Name.	Age.	Story Ret'd.			Story Ret'd.			Story Inven.		Orientation.		
		W'rds. W'tn.	P'ts. R't.	P'ts. W'g.	W'rds. W'tn.	P'ts. R't.	P'ts. W'g.	Wds. Old.	Wds. New.	C'mp. Er.	D'r'n. Er.	B'g's. Er.
F. A.	12	61	8	2	0	0	0	0	0	---	48	9
F. J.	12.5	18	5	0	39	6	6	14	0	51	24	2
C. H.	13	48	13	1	120	25	5	29	15	---	---	---
F. N.	14	77	16	0	94	20	1	33	22	---	---	---
V. C.	14	92	22	0	249	54	1	82	13	---	---	---
J. H.	14.5	6	0	0	22	0	0	0	0	54	48	4
R. P.	15	58	13	2	89	23	0	53	0	---	---	---
G. J.	16.5	146	35	2	273	66	0	66	93	21	14	1
K. M.	17	58	9	0	119	32	0	17	0	---	---	---
D. F.	19	144	37	2	313	77	3	76	107	---	---	---
M. E.	36	157	42	1	282	73	3	41	100	0	0	0
Boys' Av.	----	78	18	1	145	34	2	37	32	---	---	---
W. D.	12.5	---	---	---	---	---	---	---	---	45	60	6
H. G.	11	69	22	1	106	26	0	33	0	---	---	---
P. S.	11.5	100	19	0	86	47	0	11	41	---	---	---
H. E.	12	0	0	0	0	0	0	0	0	---	---	---
B. A.	13	20	6	1	6	3	0	15	0	90	64	7
N. L.	13	38	8	0	85	24	0	23	0	---	---	---
P. A.	13	100	20	2	134	29	3	14	65	87	77	7
W. C.	13	155	39	7	238	46	6	28	147	---	---	---
F. H.	14	11	2	0	98	24	2	42	0	---	---	---
B. N.	15	142	31	10	231	52	3	57	57	90	69	2
D. H.	15.5	150	38	4	89	16	1	58	48	---	---	---
T. H.	16.5	148	35	0	134	30	0	21	62	---	---	---
M. G.	17	94	22	6	99	25	2	55	4	---	---	---
H. A.	18.5	---	---	---	248	59	2	36	18	68	54	4
W. J.	20	17	6	0	76	22	0	23	0	---	---	---
D. M.	22	23	9	0	41	8	6	41	9	0	24	0
V. H.	23.5	170	49	1	451	132	3	59	131	---	---	---
Girls' Av.	----	81.2	20.5	1.3	136	33	2	33.7	36	---	---	---
Total Av.	----	79.8	19.5	1.2	140	33.5	2	35.2	34.3	51	44	38

Fig. 33.

In the test for 'story invention," the children were first interested in a boy and his sister who lived on a farm near Springfield, Ill., and who were given for a Christmas present a flying-machine which was so simple that they could fly with it. The day after Christmas they placed in it food and coffee to last them two days, and with fifty dollars given them by their grandfather they sailed away to see the world. What would they see, and what would happen to them until their return? Fifteen minutes were given in which to write a story of the trip, making believe that the child tested was one of the two lucky children. All began with apparent enthusiasm, but scarcely any wanted more time. The tendency to automatic repetition shows in the children's written rehearsal of my preliminaries in spite of being cautioned to write only of the trip.

The tests for directions known and for remembered relative locations, grouped as "orientation" tests, were newly devised, and have been described in the studies. They are quite worth trying out with normal pupils of successive ages, to establish norms. The essentials are (1) to place in relative order the pictures of nine of the buildings or resorts which are best known to the child; (2) to indicate the directions of four well-known places, two distant and two local; (3) to indicate the directions of the four cardinal points. The time is not limited.

The test for similars was newly arranged, and proved to be fully as valuable as that for opposites. The directions were to "Write a word that means something like what this word means, a word somewhat similar to this word in meaning." Sufficient examples were given to illustrate thoroughly. The list follows: Night, love, tobacco, tent, sweep, feel, board, lightning, bird, stone, foggy, dark, pretty, afraid, daisy, winter, big, snow, coat, run. The first test for similars was given as for opposites, giving ten to eleven minutes to

write the "similars" on the printed slip. Test II, for similars, given to the boys on the following day and using the same list, was as follows: The children had blank slips with spaces numbered from one to twenty. The words were pronounced to them as distinctly as possible, with a pause of about forty-five seconds after each in which to write its similar. The directions and illustrations were repeated.

In the tests for opposites, Whipple's lists A and B were used, and his directions were given. The children wrote for sixty seconds, and the results were recorded; then ten minutes more were given to complete the list. Test II was given on the day following Test I, and with a different list.

For the A-cancellation tests, the Norsworthy lists OY and GA, the former given also by Whipple, were used, and Whipple's directions were followed, using a constant time of two minutes each for Tests II and III. In Test I, given only to boys, an accident interfered with the time-taking, and the time may have been a little less than two minutes. The test is otherwise entirely admissible. The boys had an advantage over the girls in having the preliminary practice furnished by this test, the tests being given in sequence as numbered.

Professor Binet considered that the A-test was a satisfactory test of the attention, but only when the children were left together to do the work in the absence of their teacher or other care-taker. This test was tried, the children being reminded that some people thought they would not stick to work when their teacher was away. The result was that more was done in the absence of all supervision, though with many more errors by the girls. The appeal to the children's pride seemed to meet a definite response, and had something to do with increasing the output.

MENTAL TESTS OF BORDER CASES.

Test.		Similars.				Opposites.				A—Cancellation.					
		Right.		Wrong.		I Min.		II Min.		Crossed.			Omitted.		
		I	II	I	II	I	II	I	II	I	II	III	I	II	III
Name.	Age.														
F. A.	12	0	0	19	0	0	0	0	0	17	44	62	0	1	0
F. J.	12.5	2	9	3	4	2	3	4	4	38	67	80	62	31	6
C. H.	13	0	13	0	2	2	4	2	7	37	52	66	8	2	0
F. N.	14	5	10	5	4	3	3	6	11	58	71	89	2	1	2
V. C.	14	3	12	8	7	0	4	7	9	44	81	96	0	0	4
J. H.	14.5	0	1	0	8	0	0	0	0	41	73	79	5	4	7
R. P.	15	5	9	2	10	3(?)	---	9	11	43	58	69	3	13	1
G. J.	16.5	20	20	0	0	11	10	19	19	49	71	95	1	4	0
K. M.	17	0	3	8	17	0	2	0	2	30	50	60	70	50	43
D. F.	19	18	20	0	0	18	20	20	20	56	83	82	10	15	19
M. E.	36	19	14	1	8	5	10	15	19	66	98	97	28	2	3
Boys' Av.		6.5	10	4	5.5	4	5.6	7.5	9.3	44	68	80	17	11	7.7
H. G.	11	10	---	3	---	---	3	---	12	---	17	51	---	6	0
P. S.	11.5	18	---	2	---	---	6	---	11	---	47	63	---	1	2
H. E.	12	0	---	20	---	---	1	---	1	---	49	77	---	0	0
B. A.	13	4	---	3	---	---	3	---	3	---	0	38	---	0	45
N. L.	13	12	---	1	---	---	5	---	15	---	35	44	---	2	1
P. A.	13	17	---	3	---	---	0	---	0	---	63	87	---	14	13
W. C.	13	17	---	2	---	---	?	---	6	---	65	92	---	3	1
F. H.	14	0	---	20	---	---	0	---	0	---	50	91	---	7	10
B. N.	15	19	---	1	---	---	7	---	20	---	50	67	---	1	7
D. H.	15.5	20	---	0	---	---	10	---	19	---	87	100	---	0	0
T. H.	16.5	20	---	0	---	---	10	---	20	---	95	100	---	0	0
M. G.	17	17	---	1	---	---	2	---	4	---	81	98	---	3	2
H. A.	18.5	16	---	2	---	---	5	---	6	---	80	92	---	7	0
W. J.	20	7	---	7	---	---	4	---	8	---	60	89	---	6	6
D. M.	22	11	---	7	---	---	0	---	8	---	84	98	---	0	2
V. H.	23.5	20	---	0	---	---	12	---	20	---	70	97	---	2	13
Girls' Av.		12.7	---	4.7	---	---	4.4	---	9.4	---	59	81	---	3.4	6.6
Total Av.		10.1	---	4.5	---	---	5	---	9.4	---	63	81	---	6.7	7.1

Fig. 34.

For the association tests tabulated in Fig. 35, the list of 100 words used by Kent and Rosanoff* was used with all but cases F. A., F. J., J. H., and M. E. A list adapted from Wehrlin† was used with the others, who were tested before the Kent-Rosanoff monograph reached me. The children faced the experimenter, and the word was pronounced after a preliminary "Ready." The time was recorded with a stop-watch. In the table, "Common" is used as with Kent and Rosanoff for the words that are to be found in their "Frequency Table" of reactions made by normal persons. The "Normal, single word" column includes any additional single-word reactions whose relation to the stimulus was an obviously natural one. "Motor Speech" names the words given because of their habitual association in spoken utterance with the stimulus word. The "Errors" were failures to react at all. Egocentric is used to name reactions in which the stimulus word is taken to make immediate reference to the child himself. They can hardly be said to have occurred. The other rubrics are used as described in the case studies, or as defined by Kent and Rosanoff. Such normals as are given are for children under sixteen, and are taken from Kent and Rosanoff, except that the median reaction time is that given for uneducated adults by Jung.‡

It will be noted that the children's ages stated in the later tables vary slightly from those given in the earlier ones. The tests reported in the former were made at a correspondingly later period.

The disproportionate strength so frequently shown with

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*Kent and Rosanoff: A Study of Association in Insanity. American Journal of Insanity, Vol. LXVII, Nos. 1 and 2, 1910.

†K. Wehrlin: Ueber die Assoziationen von Imbezillen und Idioten. Jung's Studies, I.

‡Jung's Diagnostische Assoziations—Studien, I, p. 198.

ASSOCS. TO 100 GIVEN WORDS.

Name	F. A.	W. D.	F. J.	B. A.	P. A.	J. H.	B. N.	G. J.	H. A.	D. M.	M. E.	Av.	Normal.
Age	12	12.5	12.5	13	13	14.5	15	16.5	18.5	22	36	---	---
Normal, 1 Word	21	42	57	67	24	16	92	89	22	83	12	48	97
Common	---	39	---	66	24	---	88	84	17	75	---	56	96
Doubtful	---	1	---	1	0	---	0	2	0	1	---	---	0
Non-specific, 1 W'd.	0	1	2	0	5	0	5	3	0	1	0	---	5
Phrase or Sent.	66	0	0	1	68	50	1	1	1	0	86	---	---
Def. by ditto	64	0	0	1	68	49	1	0	1	0	86	---	---
Tautology	2	0	0	0	15	13	0	0	0	0	2	---	---
Sound	2	1	7	1	0	4	2	0	42	0	0	---	0
Neologism	0	0	0	0	0	0	0	0	5	0	0	---	0
Senseless	0	0	0	2	0	0	0	0	0	0	0	---	---
Motor Speech	2	0	4	0	3	1	1	0	2	0	1	---	---
Stereotypy	0	0	0	2	0	0	1	0	0	0	0	---	0
Perseveration	0	9	0	4	0	5	0	0	0	2	0	---	0
Repet. of Stim.	1	0	1	0	0	1	0	0	3	0	13	---	0
Errors, Total	9	40	30	27	4	0	1	4	24	0	0	12.6	0
Errors from Ignor.	2	1	1	3	3	0	1	0	0	0	0	---	0
Egocentric	0	0	0	0	0	0	0	0	0	0	0	---	---
Reminiscent	2	0	0	0	3	0	0	2	1	0	0	---	---
Unclassified	0	4	4	11	1	22	2	3	5	14	0	---	1
Different Reacs.	90	48	62	54	93	98	77	94	75	89	99	80	87
Med. Reac. Time	2.0	4.1	2.0	2.4	2.3	2.3	1.4	1.7	3.0	1.7	1.7	2.2	2.0

Fig. 35.

the left hand might lead one to suppose that these children were left-handed. However, with the exception of N. L., who is left-handed, and of C. A. and M. J., as to whom there is at least no left-handedness recorded, the children all used their right hands preferably and were considered to be right-handed.

In spite of the fact that a majority of these children have defective vision, only P. S. was wearing glasses when the tests were made, and only D. M., H. E., and G. J. have used glasses while in the institution, as far as could be learned.

In closing this review it may be of interest to present the results of a little test of these children's ideals concerning a life-occupation. The children were asked, "If you could be what you would most like to be when you are a man (or woman), what would you most like to be?" They were given plenty of time for reflection, and in most cases *wrote* their answers. Unfortunately, some of the cases studied here were not included in this test, but such as were gave the following replies:

CHOICE OF OCCUPATION.

Fred J.....Bandman.
Felix N.....Blacksmith.
Polly A.....I like to be a true and noble lady.
Jerry H.....Engineer on train.
Bertha A.....School teacher.
Robert P.....Shoemaker.
Dora M.....Music Teacher.
George J.....Sailor or a good farmer.
Hester A.....Churchmember in the Baptist Church.
Minnie G.....Nurse.
Beulah N.....I would like to be a Catholick sister and if not I would like to be a help to the church.
Marshall E...Officer of law (with a list of second choices).

Prudence S.....Like to be a teacher when I get big.
Viola H.....Actress.
Hilda E.....A show actreuss.
Wilda C.....Would like to a true and noble lady when I am big.
Fannie H.....I wish to be a music lady.
Nora L.....Music Teacher.
Delia H....I would like to be a Christian when I grow up.
Wendy J.....Dressmaker.
Casper H.....Coiy boiy.
Kenneth M.....Carpten (carpenter).
Fritz A.....Cow boy.
Vincent C.....Basketmaker.
David F...A good musician and work in some large factory.
Theresa H.....Dressmaker.

It is evident from the studies that the high-grade feeble-minded fall naturally into certain groups; and from these groups I am convinced that one may pass by imperceptible gradations into corresponding classes of non-feeble-minded persons, normal and abnormal. The largest number, more than one-third of my special-study cases, are characteristically *dull*. Many of these are practically normal in all the affairs of a very *simple* life, and may be mistaken for normal children if one does not know their years and does not press them with inconvenient tests of the functionings for which they have not grown brains. They lack mental resources and initiative, and tend everywhere to automatism. They rarely learn to do long division, and it is rare indeed that one advances further than this. There are doubtless all shades of intermediary conditions from these cases to the "dull" but normal pupils who made up ten per cent. of Philadelphia's school classes according to Dr. Cornell's re-

port,* though some of this latter dullness was from removable causes. I suppose that my *dull* cases correspond roughly to Binet's *arriérés* or *backward* children as distinguished from his *unstables*. In a general way most of the children may be classed under one or other of these two main groupings, Binet finding that the French schools have about two per cent of each in a total of about five per cent who are mentally defective. I find it convenient, however, to apply the term *unstable* especially to a group, which has at least four representatives in the cases studied, whose main characteristic is their instability as shown in breaches of discipline, flighty attention, roving tendencies and the like, but uncolored by any *specific forms* of instability that are as well-marked as epilepsy, hysteria, etc.

There is an intermediate group of four whom I have become accustomed to call *dull unstables*, children whose main or usual characteristic is their dullness, but who intermittently show more or less of instability.

A fourth group is of the *neurasthenically unstable*. My special cases include but two of these, but the institution has many more. Chronic neurasthenia is generally founded upon certain retardations in growth, and in these complaining but comparatively intelligent feeble-minded persons we seem to have the tail-end of the neurasthenia procession.

A fifth group, including but one or two of my special cases but with some little representation in the institution, is of the *hysterically unstable*. There is little doubt but that chronic hysteria, with its infantilism and its frequent developmental defects, makes direct connection with this group of the feeble-minded.

A sixth group includes the epileptic who are feeble-minded. My original list of highest-grade cases included three epileptics. Two hundred and seven of the institution

*See Dr. Cornell's article in *The Psychological Clinic*, May 15, 1908.

children are considered to have epilepsy at present, and there seems to be no doubt that the feeble-minded who have epileptic convulsions are related by all degrees of transition to the epileptics who are of approximately normal intelligence.

The seventh group is of the feeble-minded who show characteristic tendencies to *insanity*. Only one of my special cases shows specific symptoms of insanity; but I have become accustomed to group with such children certain others who show marked incoherence of response and action with little appreciation of the seriousness of their errors. It is well known that the feeble-minded have a special predisposition to insanity. Tredgold finds this pre-disposition to be twenty-six times that of the general population. Many of the feeble-minded are actually insane for a part of the time, and the insane group evidently makes continuous transitions along several lines to the dementia praecox, manic-depressive, and still other classes of the non-feeble-minded insane.

An eighth group is of the *morally unstable*. My special cases have contained a small and variable number of these. One case had as his most striking characteristic an ungovernable and unreasonable tendency to steal. But many members of the other groups have this tendency as well, and on the other hand the "morally unstable" cases show more or less of *mental* weakness. Still, remembering that our groupings are for purposes of convenience and are only marked by the prominence of certain traits, the term *morally unstable* applies to many cases not otherwise well characterized, but which show distinctive defect in what men call the moral nature.

A ninth group is of the children whose brains have suffered from *meningitis* or from other sources of injury, toxic or otherwise, such as has sufficed to produce a general deterioration. In still another group there is *local* or *partial*

defect of certain mental or physical functions, sometimes of the senses, without much or any general mental enfeeblement. Such are our cases of aphasia, and such was a comparatively intelligent deaf mute who was included in my original list.

Last of the groupings needed for our own special cases, there are what Dr. Cornell has called the *relatively defective*, children whose minds would be comparatively good but that they fail of their best development from poor health, poor eyes, or improper home surroundings. Prudence S. and Viola H. would generally be said to belong to this class, though its best representatives generally manage to keep out of such institutions.

Of course the new admissions include, besides, small groups of Mongolians, cretins, microcephalics, hydrocephalics, and perhaps still others who show certain distinctive mental traits. And even for the border cases the groups above are not to be taken as either exhaustive or final. Sometimes the same child may belong to more than one group or may come to show the characteristics of a different group as he grows older. Indeed many of these children now studied in their early adolescence may be expected to show some very different traits within a very few years. If we are privileged to follow out the life-courses of these cases, as I hope we may for some at least, they with others to be studied will help to suggest the natural groupings that we may finally make of defectives. The very different characters and life-conditions found for the various groups and individuals here presented may help to show the futility of many of the generalizations about defectives, and may suggest the importance, for prognosis and treatment, of obtaining a better knowledge of these groups, and of recognizing, as well, the individuality that exists even among the feeble-minded.

Certain lines of transition from feeble-mindedness to non-feeble-mindedness are evidently suggested in these studies and groupings. Connections are made with certain obvious and important groups of our "normal" population, on the one hand, and of our abnormal but non-feeble-minded population on the other. The dull, the unstable, the relatively defective, the partial defective, are all about us performing functions in society, with such of the other classes as can manage to make enough of sane adaptation. The problem is the same for all. It is one of determining the mental level of the life's capacity, actual and potential, and of adapting his environment and activities to that level. For this work of adaptation, joint study for the sociologist, psychologist, and educator, the careful and continued study of cases, normal and abnormal, will furnish the natural bases and material.

CHAPTER VI.

A SYLLABUS FOR THE CLINICAL EXAMINATION OF CHILDREN.

Ideally, the examiner of a defective or exceptional child should interview the parents and teacher, should have a note from the family physician, and should have before him the record of a recent medical and general physical examination. A carefully prepared history of the case which can be placed in his hands when the child is presented will save much time even when parent and teacher are present, and is in any case very important for diagnosis and prognosis. If teachers, social workers, and others who send or bring cases to examiners are made to know the classes of facts which it it most important to obtain in writing up a case, they may often effect a great economy of the examiner's time. They should, as well, learn to systematize their own observation of and thought about the cases; and in countless instances all the examination that can be made must be prepared for and given by themselves.

For economy of time and convenience of later reference four blanks should be used; one for the home record, one for the teacher's report, one for the physical (including the medical) examination, and one for the mental examination. These blanks may cover all the points of the present syllabus or only the most important of these. The points underlined are those which should *always* be enquired about if time permits. The Binet scale, given here as the most usable re-

source for making a brief but useful mental estimate, should ordinarily be printed as it stands if used at all. Of course the variant statements of the scale authorized by other psychologists may be found preferable for certain purposes.

Each blank should contain considerable space for noting supplementary data not asked for in the form proper, but often very important. If blanks are not used, the *habit* should be formed of grouping the facts under such general headings as heredity, development, medical history, environmental and personal history; capacity, habits, and character; school progress, physical condition, mental condition. It is of great importance that statements which seem to be of doubtful validity should be so mentioned, and that notes be made as to the apparent trustworthiness of the sources of data obtained.

The forms here presented have been worked out in handling the cases at the Illinois state institution for the feeble-minded. They will have such modification as is needed in adapting them to case study in the public schools and in other institutions. They give such suggestions as our experience has furnished and are as incomplete and imperfect as is the latter.

Outline of Case Examination and Record.

A. Home Record.

I. Heredity.

II. Development.

III. Medical history.

IV. Environmental and personal history.

V. Capacities, habits, and character.

B. Teacher's or Attendant's Record.

I. Habits and characteristics.

II. Capacities and incapacities.

III. Intelligence and perception.

IV. Learning, interests, imitation, and memory.

V. Morals.

VI. Social reactions.

C. Physical Examination.

I. Anthropometry and description.

II. Defects and deformities.

III. Medical examination.

D. Mental Examination.

I. Intelligence and retardation. The Binet scale.

A. HOME RECORD.

(Information to be obtained from parents, family physician, and others who know the family well).

General.

Child's full name and present address.
Name and address of parent or guardian.
Date of birth of child, or, if unknown, apparent age.
Birthplace of child, of father, of mother.
Occupation of father and mother.

Heredity.

	1	2	3	4	5	6	7	8	9	10	11	12	13
	Age if Living.	Present Health.	Age at Death.	Cause of Death.	Read and Write.	Criminal.	Ever receive public relief.	Tuberculosis.	Hard Drinker.	Syphilis or Gonorrhea.	Insane, Epileptic, or Feeble-minded.	Standing in Community.	Sexually Immoral.
Father													
Mother													
Father's father													
Father's mother													
Mother's father													
Mother's mother													
Brother or sister													
"													
"													

What other relatives of father or mother belong under 6, 8, *or* 11, *giving details?*

Which of the above had any of the following conditions, specifying and giving details: Drug habit, vagrancy, special peculiarities of mind or body, hypochondria, sex-perversion, defect of sight, hearing, or speech (stating whether congenital or acquired), spasms or convulsions, chorea, hysteria, neurasthenia, paralysis, other nervous diseases or conditions, apoplexy, heart disease, sudden death, goiter, other severe disease or defect, serious operations, confinement in hospitals or institutions (what and why?), miscarriages (number and cause?), cancer, suicide?

Development.

Order of birth. *Weight at birth.* *Born at full term?*

Deficiency or peculiarity at birth. What?

At what age and how were peculiarities first manifested?

At what age did the child recognize persons? Sit alone?

Stand alone? *Walk alone?* Use spoon? *Get first teeth?*

First words? *First short sentences?* *Acquire tidy habits?*

Know most of his letters? Get second teeth? Start to school?

What progress at school? Stopped at what age and grade? Why?

Reads how? Writes how? Counts to? Adds?

Multiplies? Divides?

Present weight and height?

Medical History.

What was the condition of the mother's health or habits during gestation?

Was she mentally troubled? How and why?
Was labor long and difficult? Instruments used?
Anesthetics?
Did child show deficient animation or vitality at birth?
Difficulty in breathing or nursing?
Any indications of specific disease? What?
Malnutrition in infancy? Rickets?
What troubles, if any, in teething?
Has child had the following, stating age and severity:
Meningitis or "brain fever?" Diphtheria? Typhoid fever?
Scarlet fever? Whooping cough? Measles?
Chorea or St. Vitus dance? Tuberculosis? Scrofula?
Sleep walking? Night terrors? *Nervous attacks? Describe.*
Paralysis? Describe. What disease or trouble of eyes?
Of ears? Of nose and throat? Of skin?
Has child had epilepsy? Fainting spells or spasms?
State frequency of convulsions, if any, and date of last.
What imperfections of speech? Of gait and movement?
What troubles, mental or physical, at puberty?
At the monthly periods?
Has the child been pronounced insane or feeble-minded?
When, and by whom?
Name any other diseases or affections that child has had.
Has been in what hospitals or other institutions, and why?
Has undergone what operations? *What severe accidents?*
When was the child last vaccinated? With what result?
Has the child recently been exposed to infection? State disease.

Give name and address of physician who attended at birth of child.

Name and address of present family physician.

Environment and Personal History.

Has the family always been self-supporting? Cleanly?

How was the child treated by and what was the influence of the father?

Of the mother? Of step-parent or others charged with its care?

Was the child indulged, maltreated, secluded?

How many persons in the home? How many rooms?

Was the home tranquil or disturbed? *Moral condition of the home?*

What was the influence of child's associates?

Of associates of the opposite sex?

What have been the child's greatest interests?

In what ways has the child been useful?

How does the child spend its leisure time?

Child's deportment and the impression made, at school? At work?

How long has child worked? At what work and wages?

How does he care for money or valuables given or earned?

Capacities, Habits, and Character.

To what extent, if at all, has the child used alcoholic drinks?

Tobacco? Cocaine or other drugs?

What harmful personal habits does he have?

Does he run away from home? Ever hide or destroy things?

What is his attitude to animals? To playmates? To parents?

Is child's memory good? What evidence of it?
What does he learn rapidly other than school work?
Does he pay attention well? Obey well? Feed himself?
Dress and undress? Tie a shoe lace? Have morbid fears?
Queer ideas? Specify. Is child attentive to calls of nature?
Does he sleep well? How many hours?
Underscore words that describe child: Trustworthy, industrious, untruthful, lazy, seclusive, moody, cheerful, sly, selfish, slovenly, neat, ill-tempered, violent, excitable, thieving, sissy or cry-baby, emotional, affectionate, unfeeling, fighter, fits of temper, obstinate, anxious, fearful, complaining, gossipy, laugh or cry without cause, very changeable, proud (of what), resentful.
What cause has been assigned for deficiency?
Of what delinquencies has child been guilty? Give details.
What other exceptional behavior has been noted?
What punishments have been inflicted?
What is child's attitude toward correction?
What efforts have been made to help child, when, and by whom?

B. TEACHER'S OR ATTENDANT'S RECORD.

(The child should be under observation for at least a month before this blank is filled).

Observation data concerning the habits, capacities, and mentality of..... Reported by..... Date.....

Habits and Characteristics.

Is the child very nervous? *When, and how shown?*
Is he noisy? Mischievous? How?
Does he run or stray away? Often? Get lost? When?
Can he see well? Hear well? Does he read outside of school work? What?
Does he wet day clothing? *Soil day clothing?*
What unfortunate habits, sexual or otherwise?
Does he complain much? Of what?
In what way is the child most troublesome or faulty?
In what does he most differ, if at all, from normal children?
Describe his habitual position in study or recitation.
(*Underline below the words that correctly describe the child.*)

Cheerful. Morose. Quarrelsome. Active. Obstinate. Sensitive. Moody. Good-tempered. Excitable. Changeable in mood or character. Sly. Resentful. Lazy. Slovenly. Neat. Cleanly. Proud. Of what? Silent. Talkative. Obedient. Generally destructive. Heedless of danger. Destroys clothing. Destroys furniture. Cry without cause. Laugh without cause. Mouth usually open. Emotional. Lacking in feeling. Anxious. Impulsive. Lack self-control. Easily managed. Superstitious. Apprehensive or fearful. Fears what? Cranky. Humorous. Very stupid. Selfish. Generous. Gossipy.

Capacities and Incapacities.

Does he help care for other children?

Need careful and close supervision?

Does he talk? Much? Distinctly? Can he do errands?

Does he know some letters? How many objects can he count?

Can he add? Multiply? Divide?

Reads how, in.... Reader? Understands what he reads?
well. well.

Writes fairly. Spells fairly. Copies dictation how?
badly. badly.
well. well.

Draws fairly. Plays fairly, on what musical instrument?
badly. badly,
well.

Sings fairly. What kinds of songs or music?
badly.

What and how well can child do in manual or industrial work?

In kindergarten? In gymnastics? In athletics generally?

In entertainment work? Details.

What other studies or work is he engaged in, and what progress in each?

In what does he do his best work? His poorest?

What is he "good at" in any direction?

Are there times when he does much better or worse than usual?

How account for these variations? What prevents his doing better?

What noticeable defects has he?

Intelligence and Perception.

Can he tie an ordinary knot? Understand and obey commands?

Tell time? Take care of apparatus and furniture?

How complicated machines or tools can he use?

How well adapt himself to changed schedule or other new conditions?

Does he think of what to do in emergencies, or in play? Examples.

What other evidences of intelligence or stupidity?

Ever imagine that he sees things? That he hears voices or other sounds?

Movements and Play.

Can he throw and catch a ball? Dance? How well?

How does he walk? Is he very awkward? Very active?

Left-handed? Use both hands equally well? Is he quick or slow?

What automatic movements or mannerisms has he, and when?

How does he go up and down stairs?

Play much, or at all? How? How long at one thing?

What, for example? Does he build blocks? Collect things?

Excel or lead others in play? Play over past experiences?

"Make believe" much in play? Play alone or with others, usually?

Learning, Interests, Imitation, and Memory.

Name the main interests noticed in this child, underlining the strongest.

Does he learn new work easily? Remember it well?

Learn "pieces" easily? Remember them well?

Talk or seem to think much of old-time experiences?

Of recent experiences? *Is he very forgetful?*

What does he imitate? How much and how well?

Mechanically or with understanding?

How much progress or decline have you see in him, in how long?

Does he stick to tasks well? Willing and tries?

Is he easily confused? When and how?

Do you think he will improve, stand still, or go back?

Morals.

Is he cruel? Profane? Obscene? Deceitful? Thieving?

Untruthful? Lacking in shame or modesty?

Ever violent to others? Show sense of duty?

Of right and wrong, or remorse?

What evidences of interest in religion? *Is he trustworthy?*

Of what immoral acts is the child frequently or sometimes guilty?

Other Social Reactions.

Is the child easily led or persuaded? By whom?

Over-dependent on others? Like to have and show authority?

Is he confiding? Chummy? *Timid?*

Bashful? *Affectionate?* *Sociable?* Sympathetic?
What is his attitude toward his parents?
Toward his brothers or sisters? Toward strangers?
Toward animals or pets? *Does he get on well with other children?*
Why not? *Is he a sissy or cry-baby?*

C. PHYSICAL EXAMINATION.

Anthropometry and Description.

Weight. *Height standing.* *Height sitting.*
Chest girth at inspiration. At expiration.
Head circumference. Length. Breadth.
Height above auditory meatus. Hair. Eyes. Complexion.
Teeth. Scars.

Defects and Deformities.

(Underscore those found, in list below, and add any others.)

Head: Microcephalic, macrocephalic, hydrocephalic, *asymmetrical.*

Face: *Prognathous, immobile,* inferior maxillary small, large, superior maxillary small, nasal bones sunken, *forehead retreating, narrow; face asymmetrical.*

Nose: Much deflected; septum abnormal, base of nose broad, *nostrils open forward.*

Lips: Hare-lip, lips very thick, very thin, fissured above, below, very long, very short.

Teeth: *Hutchinson's,* persisting milk teeth, serrated, pointed or notched, chalky, impacted, *irregular in shape or arrangement, decayed,* rachitic.

Soft Palate:

Hard Palate: Cleft, *V-shaped,* semi-V-shaped, *saddle-shaped, high, narrow.*

Eyes: *Pupil irregular or eccentric,* congenital ptosis, epicanthus, *oblique mongolian,* palpebral fissure small, *cross-eye; asymmetry* in size, in color.

Ears: *Very large,* very small, Darwinian tubercle, *abnormal development, asymmetrical* position or formation.

Tongue: Very large, very small, thick, flat, pointed, *fissured, enlarged papillæ.*

Thyroid: Enlarged, atrophied, absent.

Thorax: Breasts absent, atrophied, small, large, supernumerary; development of breasts in male; pigeon breast, funnel breast.

Upper Limbs: Very long, very short, asymmetrical; *malformation of right, left hand;* fingers united, supernumerary, two-jointed, very long, very short. Little fingers imperfect. *Left-handed,* ambidextrous.

Lower Limbs: Club foot; toes united, supernumerary; knock-knee, bow-legs, legs or feet very long, very short, asymmetrical.

Genitals: Incomplete descent of one or both testicles. Organs *over-developed, undeveloped,* atrophied. Hermaphrodism, true or false. *Phimosis.* Stenosis or reduplication of vaginal and uterine canals. Undeveloped uterus, ovaries, vagina. Clitoris enlarged or hooded.

Skin: Pallid, sallow, leathery, prematurely wrinkled, birthmarks.

Hair: Coarse; scanty on face, eyebrows, chest, pubes. Hairy moles or tufts on body. Bald spots. Eyebrows meet. Abnormal distribution of hair.

Nails: Thin and friable, pigmented, arched and thickened, long, short, furrowed lengthwise, crosswise.

Nutrition: *Anæmia. Obesity.*

Vasomotor: *Flushing, local heat or cold,* excessive or local sweating, factitious urticaria.

Unclassified: Gigantism, dwarfism. *General balance relaxed. Asymmetrical posture or head balance. Scoliosis, lordosis.* Feminine aspect. Mincing or shuffling gait.

Medical Examination.

1. Neuro-muscular System:

(a) Reflexes: *Knee jerk. Achilles. Pupillary.* Conjunctival. *Plantar.* Ankle clonus. Cremasteric. Abdominal. Arm. Jaw. Palatal. Pharyngeal. Defecation. Micturition.

(Examine others where indicated.)

(b) Electrical responses.

(c) Cranial nerves: II. *Visual field.* Optic discs. III, IV, VI. *Strabismus.* Ocular movements. *Nystagmus.* Ptosis. Diplopia. V. (motor, sensory.) VII. (paralysis, tics.) IX, X, XI, XII.

(d) *Vertebral column: (deviations, etc.)*

(e) Sensation: *Vision* R. L. *Hearing* R. L. Smell. Taste. Pressure. Temperature. Pain. Muscular. Stereoagnosis. Anæsthesias, hyperæsthesias, paræsthesias, especially asymmetrical or local variations. *Headache.* Vertigo.

(f) Motor: *Tonicity. Strength. Co-ordination or ataxia.*

Tremors (coarse, fine, unilateral, intentional, spastic, ataxic, intermittent, undulatory). *Paralysis. Contractures. Tics.*

Spasms (general, unilateral, local, tonic, clonic, purposive).

(g) Other nerve signs.

(h) *Speech:* Stammering, stuttering, lisping, defective articulation, semi-mutism, mutism.

(i) Writing: (j) *Mimic and gesture:* (k) *Gait.*

2. Eye, ear, nose, and throat:
3. Skin, mucous membrane, trophic disorders,
4. Circulation: Heart. Pulse. Temperature. Blood pressure. Veins. Arteries. Blood. Vasomotor.
5. Respiration: Rate. Character. Chest inspection.
6. Alimentation: Stomach. Intestines and abdomen. Breath. Tongue. *Appetite. Digestion.*
7. Liver, spleen, and pancreas.
8. Other glands (*tonsils, adenoid vegetations*, cervical, sub-maxillary, axillary, inguinal, *thyroid*).
9. Genito-uninary system: Reproductive activities and misfunctionings.
10. Laboratory examination of sputum, blood, urine, etc.
11. Habits: (Sleep, drugs, beverages, tobacco, uncleanliness).
12. Infections, vermin, vaccination.

D. MENTAL EXAMINATION.

Intelligence and Retardation. The Binet Scale as Revised by Dr. Goddard.*

Mental examination of..... Born..... School grade..... Examined by..... Date ..... Passed.....tests, of.....expected at this age. According to these tests, child's intelligence is approximately at the level of.....years, indicating a retardation of.....years. Classified as..... Conditions.....

Mentality of One and Two Years.

1. Eye follows light.
2. Block placed in hand is grasped and handled.
3. Suspended cylinder is grasped when seen.
4. Candy is chosen instead of block.
5. Paper is removed from candy before eating, child having seen the wrapping.
6. Child executes simple commands, and imitates simple movements.

*While the tests are here *arranged* as in Dr. Goddard's revision, and his own statement is used for a few of them, I have usually used my own form of statement, made directly from Binet and Simon, and intended to furnish a practically intelligible form of record for the essentials of each test. The explanatory notes are adapted from my earlier syllabi for all but the new tests. For the latter they make free quotation and paraphrase from both Goddard and Binet. Acknowledgment is hereby made for this abundant use of these authors' material, without holding them responsible for my modifications in statement.

Mentality of Three Years.

7. Touches nose, eyes, mouth, and pictures of these, as directed.
8. Repeats easy sentences of six syllables, with no error.
9. Repeats two numerals.
10. Enumerates familiar objects in pictures.
11. Gives family name.

Mentality of Four Years.

12. Knows own sex.
13. Recognizes key, knife, penny.
14. Repeats three numerals in order, when heard once.
15. Tells which is longer of lines differing by a centimeter.

Mentality of Five Years.

16. Discriminates weights of 3 and 12 grams, 6 and 15 grams.
17. Draws, after copy, a square that can be recognized as such.
18. Repeats "His name is John. He is a very good boy," and similar sentences.
19. Counts four pennies.
20. Rearranges a rectangular card that has been cut diagonally into two triangles.

Mentality of Six Years.

21. Knows whether it is forenoon or afternoon.
22. Defines, in terms of use, the words fork, table, chair, horse, mama, three satisfactorily.
23. Performs three commissions given simultaneously.

24. Shows right hand, left ear.
25. Distinguishes pretty from distinctly ugly or deformed faces, in pictures.

Mentality of Seven Years.

26. Counts 13 pennies.
27. Describes pictures shown in No. 10.
28. Notes omission of eyes, nose, mouth, or arms, from as many portraits, three of the four.
29. Draws diamond shape, from copy, so that it can be recognized.
30. Names red, green, blue, yellow.

Mentality of Eight Years.

31. States difference between paper and cloth, butterfly and fly, wood and glass, in two minutes, two satisfactorily.
32. Counts from 20 to 1 in twenty seconds, with not more than one error.
33. Names days of week in order, in ten seconds.
34. Counts values of six stamps, three ones and three twos, in less than fifteen seconds.
35. Repeats five numerals in order, when pronounced once.

Mentality of Nine Years.

36. Gives correct change from twenty cents (two dimes) paid for an article costing four cents.
37. Defines in terms superior to statements of use, in No. 22.
38. Names the day, month, day of month, year, allowing error of three days either way on day of month.
39. Names the months in order, allowing one omission or inversion, in fifteen seconds.

40. Arranges, in order of weight, boxes of same size and appearance weighing 6, 9, 12, 15, and 18 grams, in three minutes. Two out of three trials.

Mentality of Ten Years.

41. Names a penny, nickel, dime, quarter, half, dollar, two, five, and ten dollar bills, in forty seconds.
42. Copies design after ten seconds' exposure.
43. Repeats six numerals.
44. Tells what one should do in various emergencies, and answers questions difficult of comprehension.
45. Uses three given words in two sentences.

Mentality of Eleven Years.

46. Detects nonsense in three out of five statements, in about two minutes.
47. Uses three given words in one sentence.
48. Gives at least sixty words in three minutes.
49. Names three words that rhyme with *obey*, in one minute.
50. Rearranges shuffled words of 8-word sentences, two out of three, with one minute for each.

Mentality of Twelve Years.

51. Repeats seven numerals in order, when heard once.
52. Defines charity, justice, goodness, two satisfactorily.
53. Repeats, with no error, sentence of 23-26 syllables.
54. Resists suggestion as to length of lines.
55. Infers correctly the fact indicated by circumstances given, in each of two trials.

Mentality of Fifteen Years.

56. *Interprets* pictures shown in Nos. 10 and 27.
57. Imagines clock-hands interchanged for hour 6.20 and for hour 2.56, telling the time.
58. Writes "Caught a spy" in symbols after learning code, one error permitted.
59. Writes correctly the opposite of seventeen out of twenty given words.

Mentality of An Adult ("Over 15 Years").

60. Imagines and draws result of cutting triangle from side of twice folded paper.
61. Imagines and draws new form produced by joining transposed pieces of diagonally divided rectangular card.
62. Distinguishes between abstract terms of similar sound or meaning.
63. Gives three differences between the president of a republic and a king.
64. Gives the central thought of a selection read to him.

No descriptive notes and directions can take the place of a careful reading of Binet's articles in *l'Anneé Psychologique* for 1908 and in the *Bulletin de la Société libre pour l'Étude Psychologique de l'Enfant,* for April, 1911. The latter article gives Binet and Simon's revision of the original scale. Dr. Goddard, after using the Binet tests upon four hundred feeble-minded children and two thousand normal children, has made a further revision.* With very minor modifica-

*Teachers, social workers, and others who are themselves to use the Binet scale will find the pamphlet printed by Dr. Goddard in 1911, entitled *The Binet-Simon Measuring Scale for Intelligence,* to be their best guide in English for the actual giving of the tests. See the bibliography to this volume. See also my note concerning the need of some personal direction in addition to such reading.

tions the latter is the scale here printed. Most of the tests are the same as in the original scale, but some of them have been distributed differently. The tests for thirteen years have been placed higher. After reading Binet's 1908 article the following supplementary notes, bearing the numbers of the tests to which they refer, may give sufficient guidance for making the tests which are not self-explanatory. The first six tests, really part of an older scale described by Binet in *l'Année Psychologique* for 1905, represent successively higher levels of mentality, as numbered, throughout the first and second years.

No. 6. (a) Shake hands. (b) Be seated. (c) Pick up the box. (d) Go to that chair. (e) Come back. (f) Clap hands this way. (g) Hands in air; (h) on shoulders; (i) behind back; (j) one hand around the other. (k) Rise on toes.

Nos. 8, 18, 53. Correct repetition of one sentence in three suffices.

Nos. 9, 14, 35, 43, 51. Half-second intervals, uniform emphasis, one success in three trials.

Nos. 10, 27, 56. But one test is made, by presenting in succession three pictures, asking for each, "What do you see here," and noting replies. Binet's pictures are (a) an old man and boy dragging up the street a cart laden with their household goods; (b) a poor old man sitting by his daughter, who is unwell, on a bench beside the street on a dreary evening; (c) a man confined in a room bare except for bed, chair, and tables, and looking out of his tiny window.

No. 12. "Are you a little boy or little girl?"

No. 16. Weights are of same size and appearance.

Nos. 19, 26. Child touches each penny as counted, tallying correctly.

No. 20. Place the pieces with the hypotenuses away from

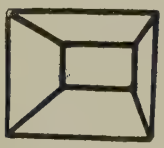
each other. Child must discover for himself that he has the right form. See that he does not turn over either piece.

Nos. 22, 37. One test for the two numbers. Answers which pass No. 37 are such as "A horse is an animal that pulls a wagon," "A mamma is a lady who takes care of the house, cares for the children," etc.,—almost any response, indeed, which is of higher order than the simple "A chair is to sit on," "A table is to eat on," etc., of No. 17 grade. Three of the five must be satisfactory.

No. 23. "Put this key on the table, then close the door, then bring me that box," or a similar series of directions.

No. 36. Play store, give child some change, have him sell a box and actually hand over the correct change.

No. 42. Use this design. Expose ten seconds. Have child draw his design on back of record sheet.



No. 44. What ought one to do

1. When one has missed the train?

2. When one has been struck by a playmate who did not do it purposely?

3. When one has broken something that does not belong to one?

4. When he is detained so that he will be late for school?

5. What ought one to do before taking part in an important affair?

6. Why does one excuse a wrong act committed in anger more easily than a wrong act committed without anger?

7. What should one do when asked his opinion of some one whom he knows only a little?

8. Why ought one to judge a person more by his acts than by his words?

Allow at least 20 seconds to each question. Five of the eight must be answered correctly.

Nos. 45, 47. Words fairly equivalent to Binet's, for our children, are "Chicago, fortune, and river," with preliminary practice on the easier "Springfield, money, and boy." Must be completed in about one minute.

No. 46. Announce that you will read some sentences, each of which contains something foolish. Then read slowly, in a convinced tone: (a) A poor bicyclist fell and broke his neck, and died on the spot. He was taken to the hospital, and they fear very much that he cannot get over it. (b) I have three brothers, John, Jim, and myself. (c) Yesterday the body of a poor young girl was found, cut in 18 pieces. People think that she killed herself. (d) There was a railroad accident yesterday, but it was not serious. The number of dead is only 48. (e) We found a boy, with his hands and feet tied behind him, locked in a room. We think he locked himself in.

After each number ask what is foolish in it. The whole test lasts about two minutes, and replies must be satisfactory for three of the five numbers.

No. 48. Child is asked to say all the words he can think of, such as table, beard, shirt, go, etc.

No. 49. First illustrate rhyming, by examples.

No. 50. Make sentences of these words:

(a) For — The — Started — An — We — Country — Early — At — Hour.

(b) To — Asked — Exercise — My — Teacher — Correct — My — I.

(c) A — Defends — Dog — Good — His — Bravely — Master.

No. 52. Ask "What is goodness," etc. Such answers as

"Goodness is to share with others," "To return good for evil;" "Charity is to give money to old people who cannot work," are satisfactory.

No. 53. (a) I saw in the street a pretty little dog. He had curly brown hair, short legs, and a long tail. (b) My little children, you must work very hard for a living. You must go every morning to your school. (c) Johnny is often whipped for being naughty. I went to the store and bought a doll for my sister.

No. 54. Prepare a booklet of six pages. On first page draw two horizontal lines, in ink, the one to the left two inches long, the one to the right two and a half inches. On second page, left line is two and a half inches, right three inches. Third page, left line is three and right one is three and a half inches. On the three remaining pages all lines are three and a half inches long. The lines on each page are in same straight line and separated by a half inch. When the child has found the right line longer three times in succession, will he continue to make this judgment even when he comes to those that are alike, or will he resist suggestion and pronounce them alike? For the first two pages ask "Which is the longer line?" For the others say merely "And there?"

No. 55. (a) "A man who was walking in the woods near Chicago suddenly stopped, very much frightened, and then ran to the nearest police station to tell them that he had just seen, fastened to the limb of a tree, a.....?" (b) "My neighbor has just received some peculiar visits. There came, one after the other, a doctor, a lawyer, and a minister (or priest). What is going on at my neighbor's?"

Such answers as (a) "A dead person hanging," and (b) "My neighbor is dying," are correct, and both numbers must be answered satisfactorily. Doubtless this test can be improved.

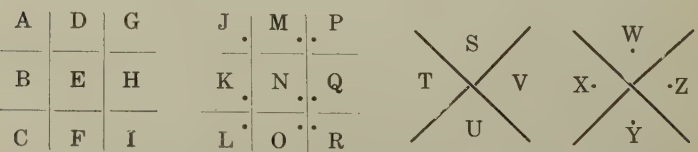
No. 56. In 10 and 27 did child interpret the "feeling of

the picture," usually "by some word of sympathy, fear, sorrow, joy, or other feeling?"

No. 57. Without seeing a watch or clock, tell the time of day indicated by the hands interchanged at these hours.

No. 58. While the following diagrams are being constructed the child must give close attention, noting arrangement of letters in alphabetical order, vertically in the first and second and counter-clockwise in the third and fourth. The second and fourth have a dot in each section. "Knowing the scheme, the letters may be left out and a cipher dispatch written by using for each letter the part of the diagram in which the letter is placed in the key. For example, 'war' would be written

"Having made it perfectly clear, remove the key and have child write on back of record sheet 'Caught a spy,' in this code." Allow one error, every wrong or incomplete symbol counting as an error.



Note. This test, recently suggested by Dr. Wm. Healy of Chicago, is said to have been used by the Southern army in the Civil War.

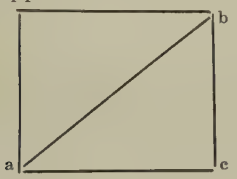
No. 59. Hand the child a slip of paper with the following words printed in vertical column, with space to write the opposites at the right of each: (1) Good, (2) outside, (3) quick, (4) tall, (5) big, (6) loud, (7) white, (8) light, (9) happy, (10) false, (11) like, (12) rich, (13) sick, (14) glad, (15) thin, (16) empty, (17) war, (18) many, (19) above, (20) friend.

Besides the obvious answers, the following receive whole or half credit: (2) In or indoors (half credit); (3) lazy

or slowly (half); (4) little or low (half); (5) short (half); (6) soft or low (full credit), whisper (half); (9) sorry or sorrow (half); (10) right or truth (half); (11) dislike, unlike, or hate (full); (13) healthy (full); (14) mad (full); (15) broad (half); (16) filled (full); (18) none (full); (19) under (full). The equivalent of seventeen correct answers must be given.

No. 60. Fold a square paper in four, before the child, and cut from it a small equilateral triangle based on the middle of the closed edge. Ask to draw paper as it will look when unfolded.

No. 61. Present a rectangular card cut in two along a b. Suppose we should turn over the lower triangle so that c should lie at b and a c should lie along a b. Remove the lower piece and have child image and draw the new total shape suggested, beginning with the upper piece.



No. 62. What are the differences between—

(a) Pleasure and welfare?
(b) Evolution and revolution?
(c) Event and prevent?
(d) Poverty and misery?
(e) Pride and pretension?

No. 63. "There are three differences between the president of a republic and a king. What are they?" The answer should contain the three ideas that (1) royalty is hereditary, while the president is elected; (2) a king reigns for life, a president for a limited period; (3) a monarch has extensive powers, while a president's powers are usually less extensive.

No. 64. Explain that you will read a selection to which subject is to give close attention, and that he is to tell the

substance of it afterward. Read slowly, in a clear voice and with expression, the following: "One hears very different judgments on the value of life. Some say it is good, others say it is bad. It would be more correct to say that it is ordinary or of middling worth; because on the one hand it brings us less happiness than we want, while on the other hand the misfortunes it brings are less than others wish us. It is this ordinary or medium quality of life that makes it endurable; or, still more, that keeps it from being positively unjust."

The subject must give the central thought in his own words; *e. g.*, "Life is neither good nor bad, but medium, because it is inferior to what we wish and not as bad as others wish for us."

In making the records of the tests we use a plus sign for passed, a minus for failed, an exclamation point for absurd response, A for failure through inattention, T for failure through timidity, R for failure through resistance, I for failure through ignorance. In rare cases partial credit is given, expressed in a fraction. The testing should begin below the child's apparent level. Indeed, I usually try all the tests that I am not certain of the child's passing, and the testing should continue until there is no possibility of his going further. He should be encouraged and praised whenever possible, and failures should never be dwelt upon. In making the count the child is credited with the age level at which he passes all the tests, plus one year for each five tests passed at higher levels. We record also the total number of tests that are passed, with the number that *should* be passed at the child's age. We have found it convenient to use half years; that is, the child's age may be 10½ and his mental level 8½.

Usually it is far better to be alone with the child, and in any case the test must not be discussed or in any way in-

terfered with. Many of the child's responses should be copied verbatim, and notes should be made of his conduct shown in the various circumstances of the testing.

Finally, I would urge again, as earlier,* that "these Binet tests must be used with judgment and trained intelligence, or they will certainly bring themselves and their authors into undeserved disrepute. Such a syllabus as is here presented by no means prepares mothers and teachers to make any valid test either of their children or of the scale. A child will often be shown to have the knowledge needed in a test in which he failed, and the test will then be called inadequate. But the test is not of knowledge merely, but of the ability to use knowledge in meeting a situation created by the standardized conditions of the test. Results can be considered valid† only when the tests are made by an experienced psychologist who has familiarized himself with Binet's directions, or by other competent persons who apply the tests under the direction and supervision of such a psychologist.

If the tests are to be used in determining who are to be placed in special classes, the little book *Les Enfants Anormaux*, by Binet and Simon, will be found extremely valuable. According to this French plan, a pedagogical exami-

*Journal of Ed. Psychology, October, 1910.

†That is, it is only when the tests are made under such conditions that the results can be expected to be reasonably free from errors, and entitled to publication or record as having such scientific validity as can be claimed for the scale. But on the other hand I quite agree with Dr. Goddard that this and similar scales will have a very large use and usefulness in the hands of intelligent teachers and social workers everywhere, in making *approximate* estimates of children's mental status, for immediate local use. The directions given here, supplemented by those in Dr. Goddard's pamphlet, will quite suffice for this, provided that there can be further direction on points as they come up, and occasional supervision of the testing itself, by some one who has at least been adequately trained in the actual giving of the tests. Only the exceptionally intelligent can safely dispense with such *personal* direction and correction, in the beginning. Indeed the exceptionally intelligent are usually themselves among the first to feel the initial need of it.

nation must first show a pedagogical retardation of three years, or of two years if the child is under nine. Then the mental tests are used, and only the backward children who show an equal amount of *mental* retardation are sent to the special classes. It is to be noted, however, that beside the children whose main characteristic is their mental 'backwardness' Binet would send to special classes the "unstables," who are apt to show a mental retardation of only one or two years.

CHAPTER VII.

CONCLUSION. THE MENTAL FUNCTIONS TO BE TESTED AND OBSERVED.

To obtain adequate account of any mind there is, of course, much to be done beside testing the intelligence. Much further knowledge of the intelligence itself may be gained by using a variety of tests not contained in the scale of Binet and Simon. Many of these further tests have been well described in recent manuals and articles, and some of the most usable or important of the latter are listed together in the brief bibliography at the close of this volume. As the syllabus of the preceding chapter has special reference to routine work with cases, it has not seemed best to complicate matters by attempting here a formulation of research tests. A tentative scheme of the latter was worked out at Lincoln, including, beside many standard tests, a number that were being newly devised and tried. However, all that have really contributed much to an understanding of the cases studied have already been referred to, and a statement of others may be made when there is time to perfect them.

It is for the mental levels above the twelve-year limit that a further formulation of tests and of lines of observation is most urgently needed. Intelligence itself normally continues to make some gain in efficiency and some transformation in character year by year to maturity, and even on thru middle life. But the intellectual advance is progressively more specialized and variant with the individual, making more diffi-

cult its measurement by any standardized schema or scale of tests. At any rate, in these higher levels the further mental growth and the retardations that concern us most are not so much in the intelligence as in the feelings, the emotions, the instincts, and in the control and direction of these and of the functions generally; in the new consciousness of a new self, and in the widening of social consciousness and social relationships, with the master function of sex always prominent.

At these levels the *structures* necessary for all mental functionings may be supposed to have been grown, though perhaps badly grown and of strength insufficient for their work. Arrest at these levels leaves the youth in the zone of the psycho-neuroses, characterized in part, as Dubois of Berne has said, by "the intervention of mind, of mental representations, in all their symptoms." The functions do not grow to the possibility of making the higher adaptations, or make them so feebly that they are easily shattered in emotional shock and in the varied vicissitudes of mature life. "The neuroses appear almost always at the ages in which the organic and mental transformation is the most accentuated, says Janet, "at puberty, marriage, the death of intimate relatives or friends, the changes of career or of position."

Into the classification of the neuroses it is not my province to enter here, but merely to point out that they form the next higher rungs in the ladder of retardation, continuously transitional, in my judgment, from certain classes of the feeble-minded. For clinical pictures of these higher defectives we have especially the extensive and excellent studies of Janet, on neurasthenia, psychasthenia, hysteria, and certain forms and equivalents of epilepsy. For certain forms of hysteria at least, many would consider Freud to be still more enlightening. Then in Adolf Meyer's interpretation of dementia præcox we have an equally important account of

other forms of late mental arrest and deterioration. Again, on lines leading toward manic-depressive and other forms of insanity, Kræpelin's studies are well known and are of course illuminating. In these and other clinical studies there begin to be suggested the functions which figure most in the higher forms of arrest; the functions which are basal and primary, whose imperfect development and insufficient or perverted exercise entail serious consequences. The selection of these functions and of tests for their condition of efficiency or inefficiency is work for a clinical psychology that still awaits formulation. As to what these functions are I shall here only refer to some very tentative notes which I have already printed elsewhere and for whose revision there is now but little time. They at least contain suggestions that have a certain value if happily the brevity of statement may not lead to too much of misconstruction: First of all, the function of *completed action* in rapport with the widening demands of maturing life, really the intelligence or rather mental efficiency taken in the very broadest sense, is the most difficult and highest function, as Janet so often urges. Then of less general functions we know that *movement* and the *control* of movement are essential, and we are indeed already provided with some good tests of this function, though standard norms are yet to be established. We know that *attention* is somehow fundamental, that normal grip that a mind takes upon itself in holding down to an adaptation called for; and we know that attention is of the essence of *will*. The function of *synthesis*, of *mentally spanning* numerous or complex elements, is in part identical with the power of attention, but only in part. Can the patient keep track of the score at a ball game, make plays that he knows how to make in a game of cards, hold a row of numbers or objects in order till he can give an account of them? It is not merely to have attention power to ignore extra or dis-

tracting factors, but synthesizing power to face and use them all in getting a result. *Emotivity*, in Janet's fruitful use of the term for the general tendency to interrupt adaptations by mal-adapted phenomena of confusion, emotion, and derivation, is the opposite of the power of synthesis. It is one of the most fundamental conditions in neurasthenia and hysteria.

The function of *feeling*, with its phases of susceptibility to pleasure and pain through the various interests, notably the *play* and art interests, this we are finding to be quite different from emotion and emotivity. New means of testing this side of life are recently being developed and it is not so impossible a field as it once seemed. The condition of the *instinctive* activities is of course to be noted as well. *Learning, memory, and the ability to make report*, together form a practical function of the greatest importance. *Reasoning*, just the intelligence made articulate by the use of general rules and abstract conceptions, is to be examined as a development of the intelligence.

Then we have the function of forming *ideals* and of estimating *values* and relative worths, for the guidance of judgment and action. There are the *self-estimations* and *self-relationships* which make up the *social* phases of mind and which include the bases of *morals* and *religion*. And there is the function of *self-direction* and the opposite tendency to a mental attitude and condition of *dependence*. There is further the difficult but not so hopeless problem of *temperament* and *personal attitude*.

In certain cases, certainly, the characteristics of *association* and of the train of *thought* become of extreme importance, and the *orientation* in space and time. The *rate* and degree of *intensity* at which mental work goes on, the behavior in the face of *difficulty*, the facility of *fatigue* and of *recuperation*, are also to be estimated. Most fundamental of all, for

interpreting a great variety of cases, is the ability to maintain a sufficient and normal *level* of mental functioning or of psychic tension. Janet, for instance, believes that the essential fact of the functional neuroses is the inability to reach or to safely maintain normal levels of functioning.

Whatever the fundamental functions may be it is a next step to determine at least more of them than have usually been clearly in mind when tests were planned. Not that formal tests can or need be applied to all functions, though they can help in the study of most. Nor that a mind can be picked apart and the pieces measured piecemeal. In testing any function the mind is, of course, exercised in many other functionings. But a proper test calls the selected function into dominant action, the conditions are standardized with reference to it, and the observation and record are devoted to it. In making field observations and especially in working up field data the emphasis will come to be placed on what is found to happen when these fundamental functions are involved. Perhaps at present we need most of all a better formulation of methods of field study; and possibly if much more attention were paid to the *life-course* of the patient rather than to the multiplication of tests there would be quicker progress to a decision as to which tests are worth while.

Professor Binet has rendered a great service by determining the normal behavior, at each age to twelve, of a group of related functions, mainly of the intellect and loosely classed together as the "intelligence"; a term, by the way, that has come to have a very elastic content. The phases of mind that are measured in his scale are fairly typical of mental growth to the dawn of adolescence. Which of our investigators, competent to the task, will make sure of some great function or group of functions that rises into dominance in this adolescence period, and will work out for each

advance in years its normal behavior and transformation? When there has been such wise selection of the trunk lines along which mental development goes forward in these later years, and of the typical modes of deviation and arrest, and when we know the normal progress to be expected along each line with each added year, we shall then have constituted a balanced scale of norms for the later development of the essential mentality. Such a scale will by no means be limited to a formulation of *tests,* though it will include such tests as can be utilized. But it will give normal standards for judging the life as observed in its natural and normal activities.

All this is work for none but the most mature and competent men who have abundant freedom and facility. For the workers in the field I believe that a faithful following of the fortunes of individual cases, using any tests and methods of observation and study which will help to throw light on essential conditions, is the kind of work most needed at present. For statistical study, reliance cannot be placed on the present means for gathering data in most institutions; and it seems to me that in the present "frontier" stage of this work the man who keeps face to face with his cases and who works up the case-background in the light of which his observations are to be interpreted, is the man who is likely to help most to a real understanding of defectives.

In this belief, perhaps the very imperfections of these case-studies and of these tentative syllabi and concluding formulations may encourage others to frankly begin in *their* own best way, with the cases and resources that are now accessible to them. They will find the work of the clinician to be as full of fascination as it is of opportunity for far-reaching service.

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JOURNALS.

Psychological Clinic. The Psych. Clinic Press, Philadelphia. Complete set should be owned, and is inexpensive.

The Training School. Published by N. J. Training School, Vineland, N. J. Last four or five volumes should be owned, and are quite inexpensive.

Journal of Psycho-Asthenics. Published by Minn. School for the Feeble-minded, Faribault, Minn. Vols. XIV and XV should be obtained.

The Survey. New York.

American Breeders' Magazine. Washington, D. C.

Eugenics Review. Published by the Eugenics Educational Society, London.

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School Hygiene. Dr. Geo. S. Badger, 48 Hereford St., Boston, Mass.

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